APR 2 1928

UNITED STATES NAVAL INSTITUTE PROCEEDINGS

Vol. 54 APRIL, 1928 No. 302

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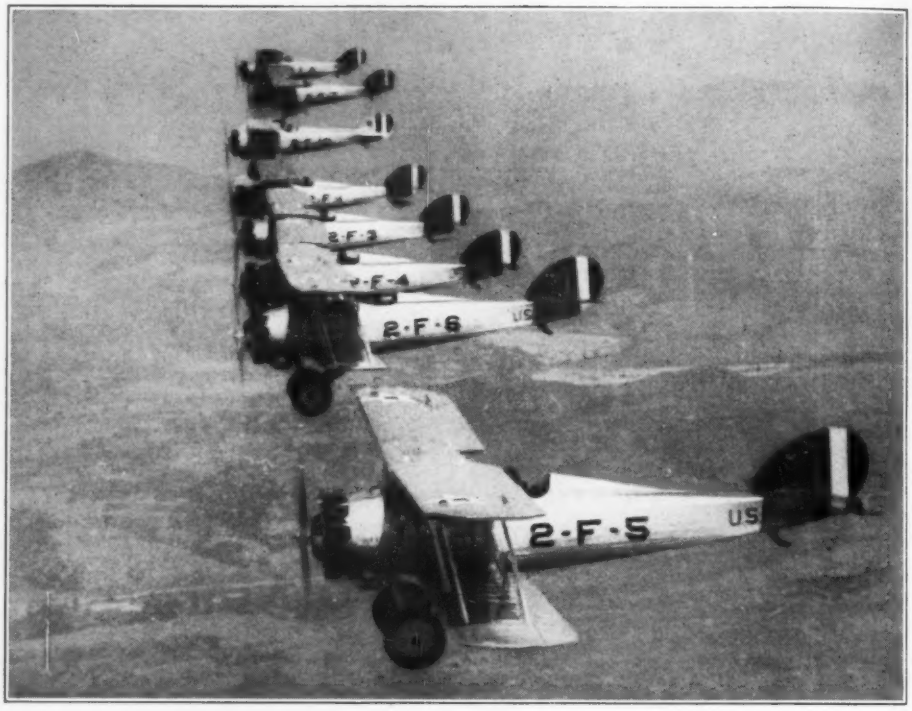

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3. In addition to the "Naval Institute Prize," one or more essays may receive "Honorable Mention," if of sufficient merit to justify that award; or, in the event that no essay is adjudged of sufficient merit to receive the "Prize," the best essay submitted may receive "Honorable Mention" in lieu thereof.

4. In case one or more essays receive "Honorable Mention" the writers thereof will each receive a prize, the amount of such awards to be decided by the Board of Control in each case.

5. Announcement of awards will be made as soon as practicable after January 1, 1929.

6. Essays awarded the "Naval Institute Prize" or "Honorable Mention" will be published in the NAVAL INSTITUTE PROCEEDINGS as soon as practicable. Essays not awarded a prize may be published at the discretion of the Board of Control, and the writers of such articles shall be compensated at the established rate for articles not submitted in competition.

7. Articles shall be limited to eleven (11) printed pages in the PROCEEDINGS (approximately 8,000 words), but shorter articles will receive equal consideration.

8. In the event of the prize being awarded to the winner of a previous year, a gold clasp suitably engraved will be given in lieu of the medal.

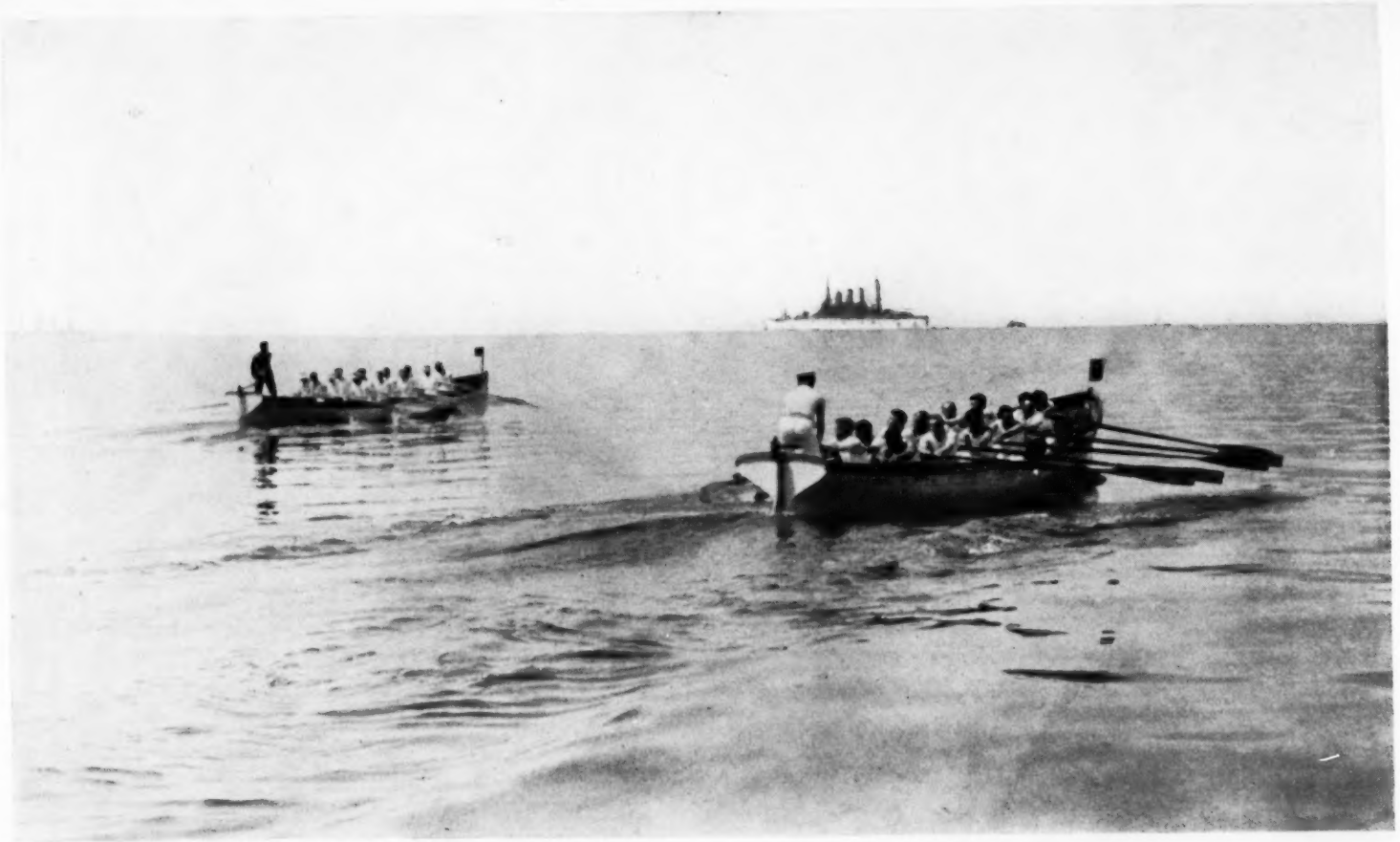
9. All essays must be typewritten, double spaced, and submitted in duplicate.

R. C. MACFALL
Captain, U.S.N., Secretary-Treasurer

Courtesy of Lieutenant Commander R. Wainwright, U. S. N.

FLEET AT ANCHOR, MAGDALENA BAY, LOWER CALIFORNIA, 1908

Magdalena Bay, Fisherman's Paradise, where the fleet stopped for a month in order to carry out gunnery exercises.



Courtesy of Lieutenant Commander R. Wainwright, U. S. N.

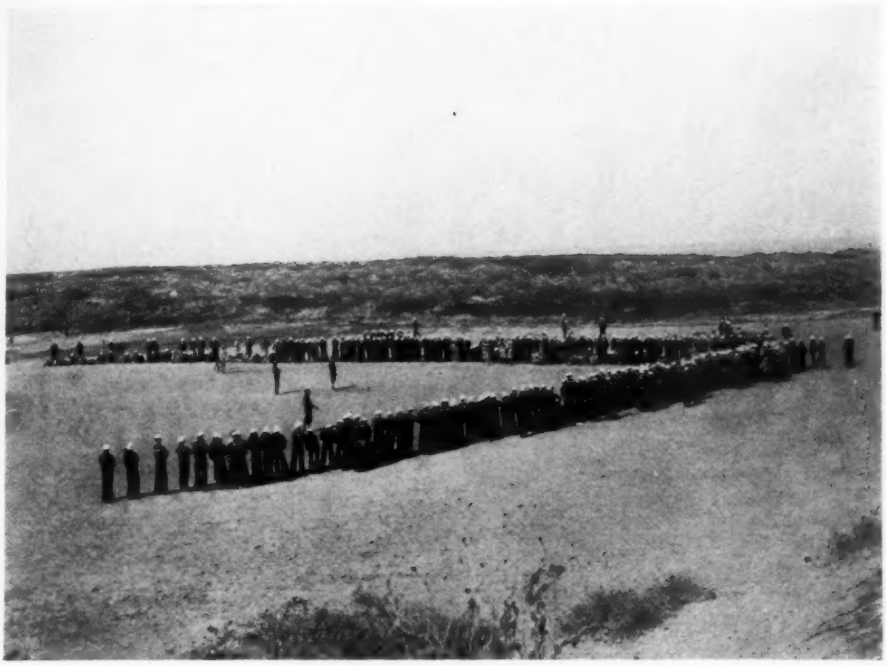
BOAT RACING, MAGDALENA BAY, 1908

In spare moments, ships engaged in the time-honored sailorman's sport of boat racing.

Courtesy of Lieutenant Commander R. Wainwright, U. S. N.

WORK AND PLAY, MAGDALENA BAY, 1908

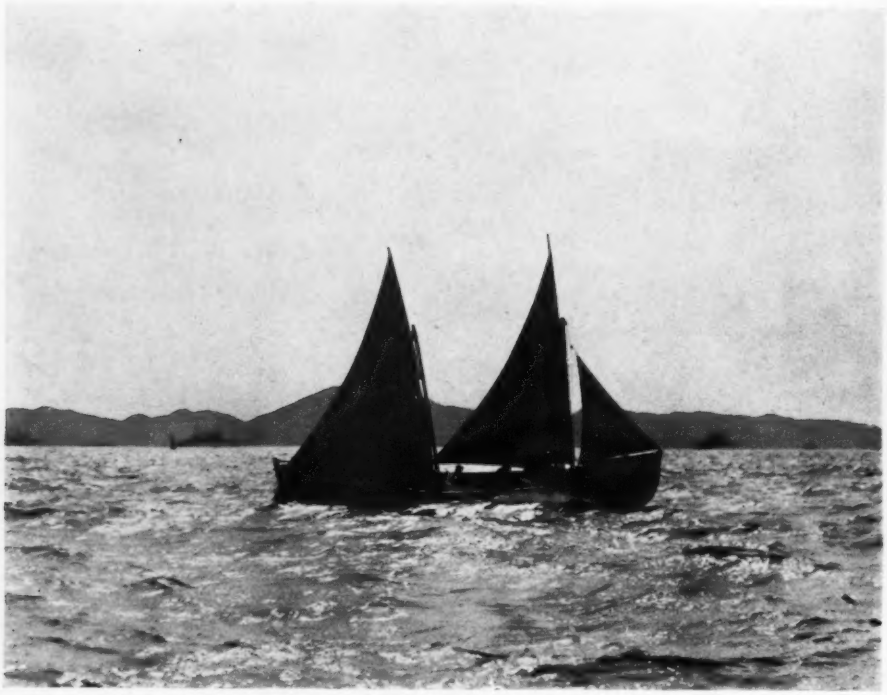
Upper: 7 inch gun target, U.S.S. *Connecticut;* center: sailing races; lower: bird life on shore.



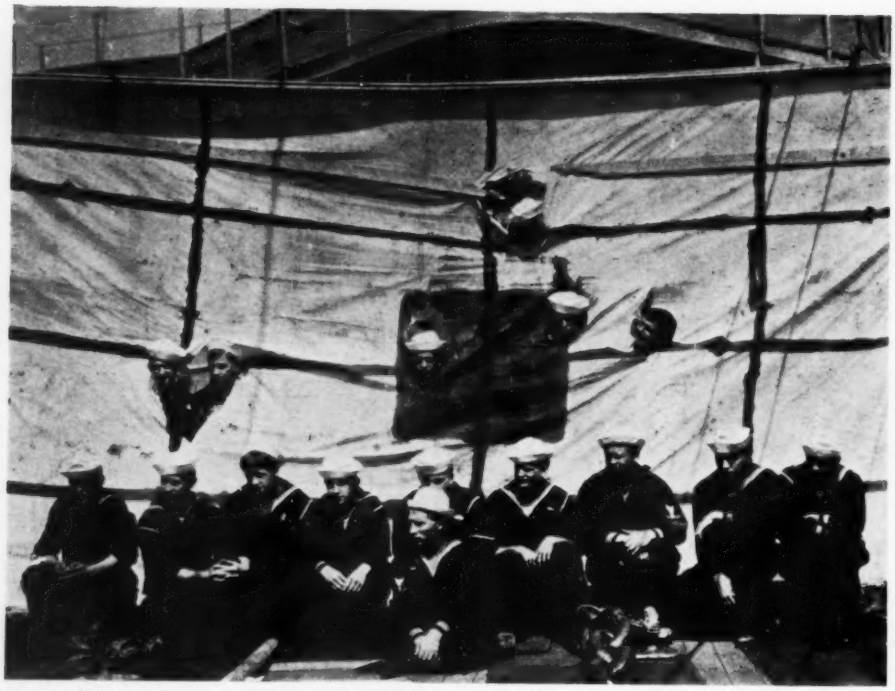
BASEBALL, MAGDALENA BAY, 1908
Water may have been scarce, but there was room to play baseball.

Courtesy of Mrs. E. J. Quimby

VILLAGE AT MAGDALENA BAY, 1908
Only a few fishermen were to be found living on the shores of Magdalena Bay.

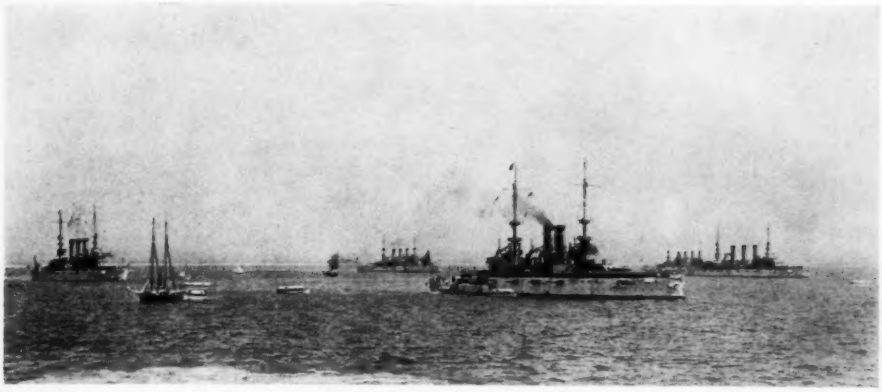


SAILING, MAGDALENA BAY, 1908
One of the Navy sports.



Courtesy of Lieutenant Commander R. Wainwright, U. S. N.

TARGET PRACTICE, 1908
We see that the fleet was able to hit the target twenty years ago. Above is target of a 7 inch gun of the *Connecticut*.



FLEET AT ANCHOR, OFF CORONADO, CALIFORNIA, APRIL 14, 1908
Once more in home waters. Note yacht *Ramona*, "Capt." Quimby, which saluted fleet off Coronados Islands.

Courtesy of Mrs. E. J. Quimby

FORT ROSECRANS, SAN DIEGO, CALIFORNIA, 1908
On the port hand, entering San Diego harbor.

Courtesy of U. S. Army Air Corps.

AIR VIEW OF SAN DIEGO HARBOR (MODERN)

Note: In lower right hand corner, Coronado Hotel and Tent City; upper right hand corner, a part of city of San Diego and Balboa Park; left hand, Naval Air Station; upper left hand corner, Naval Training Station and Marine Base.

Photo: In lower right hand corner, Coronado Hotel and Tent City; upper right hand corner, a part of city of San Diego and Balboa Park; left hand, Naval Air Station; upper left hand corner, Naval Training Station and Marine Base.

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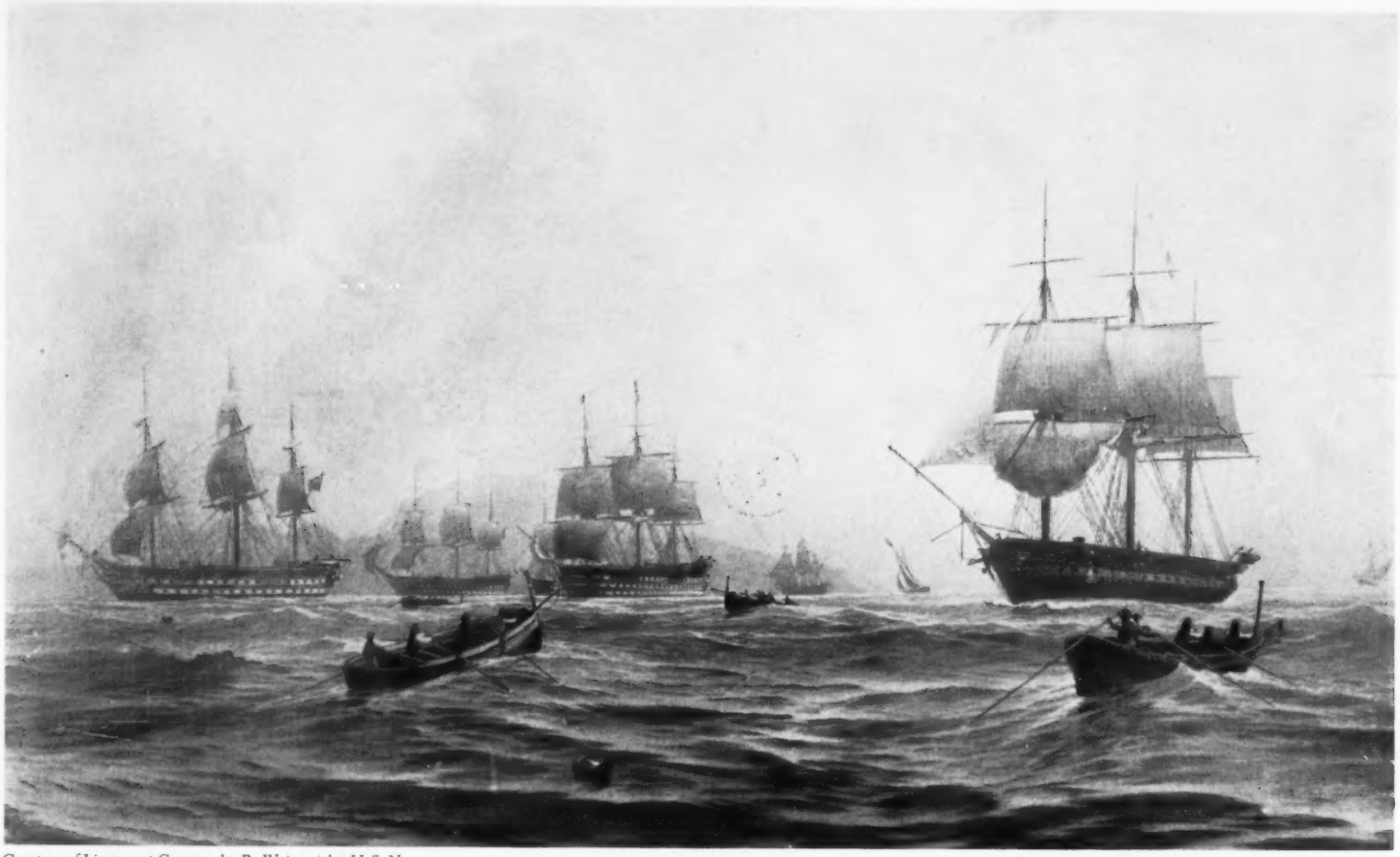
DESTROYER SQUADRONS ENTERING SAN DIEGO HARBOR (MODERN VIEW)
The destroyers of the battle fleet operate out of San Diego.



Courtesy of Lieutenant Commander R. Wainwright, U. S. N

AN UNIDENTIFIED PICTURE

Copy of oil painting presented to Naval Historical Foundation by Miss Mary Thornton Watson, daughter of Rear Admiral J. C. Watson, U. S. N. This picture belonged to the collection of Admiral Farragut and is presumed to be a picture of Admiral Farragut's European Squadron off Gibraltar, 1867, with U. S. S. *Franklin* at left. Can anyone identify it?

belonged to the collection of Admiral Farragut and is presumed to be a picture of Admiral Farragut's European Squadron off Gibraltar, 1867, with U. S. S. *Franklin* at left. Can anyone identify it?

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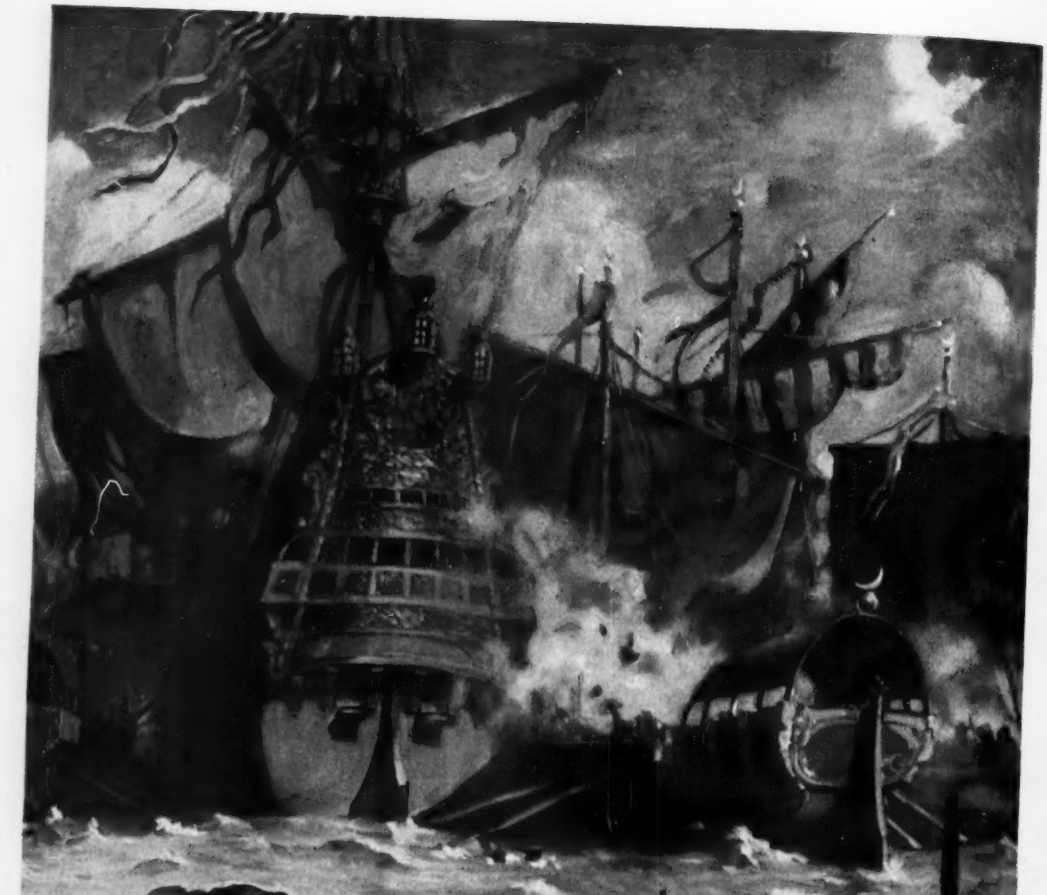

The Age of Oars and Sail

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UNITED STATES
NAVAL INSTITUTE
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Vol. No. 54, No. 4 APRIL, 1928 *Whole No. 302*

On *the* Prevention *of* War

By LIEUTENANT COMMANDER A. H. ROOKS, *U. S. Navy*

(EDITOR'S NOTE: See page 338 "Secretary's Notes.")

I

WE WERE once assured that the World War was to be the last war, the war to end war. In the years since the Armistice we have witnessed an unprecedented flood of opinion on the causes of war and a determined effort to eradicate them. Everyone has a formula for preventing, or at least for minimizing, the possibility of war. The prevention of another world conflict, judging by the publicity it has received, is the outstanding problem of the century. We of the military service have a very special interest in that problem since in a way we are devoting our lives to its solution.

The most serious efforts have been made along three main lines. There was, first, the older idea of the balance of power. A perfect balance of power would undoubtedly prevent a great many wars. If each nation was, and continued to be, as capable of offensive and defensive action as every other nation, each would soon find it worse than useless to provoke a war single-handed. Superiority could only be attained by alliances. It is even possible to imagine perfectly balanced alliances as a preventive of war. In reality there are no such perfect balances, and the historical idea has been abandoned, at least in theory, as a means for preserving the peace. It may have a minor application in treaties for the mutual limitation of armaments.

Most important before the World War were The Hague Conferences, which adopted among others a convention for the pacific settlement of international disputes and for the establishment of a permanent Court of Arbitration at The Hague. That they were impotent to prevent war was in part due to the impossibility of conditions at the outset. The conventions merely provided a means for preserving peace should all the great nations really desire peace. In the same general class were the so-called Bryan Peace Treaties, the signatories to which agreed to delay war for a year of investigation and report by a permanent tribunal. If each sovereign state made such a treaty with every other, there would be nearly 4,000 arbitration treaties alone.

The next step was toward a league of nations. As first proposed during the World War, this was to be a league to enforce peace by the application of military force and economic pressure. Included in this general idea was the "outlawry" of war. After the formation of the League of Nations, however, circumstances forced the evolution of the idea toward a free association of nations pledged to peace, but not pledged to employ military force against offenders. It is considered necessary by the proponents of this plan to re-educate and exhort public opinion away from nationalism and toward internationalism; to codify international law and create a body of international judges; to bring about general disarmament; and, as a throw-back to the

idea of enforcing peace, to negotiate economic pacts and to create machinery for applying economic pressure.

The present League of Nations as first constituted appeared to be a league to enforce peace. Article X of the Covenant pledged members to defend each other against aggression. Article XVI pledged member nations to apply the economic boycott against any other nation which defied the covenants, and it assigned to the Council of the League the duty of recommending "to the several governments concerned what effective military, naval, or air force the members of the League shall severally contribute to the armed forces to be used to protect the covenants of the League."

In the years since its creation the League of Nations has altered the construction of those articles specifying the use of force. Article XVI has been amended, and the original intent of both articles is said to have been reduced to something near "innocuous desuetude." Therefore there appears to be some doubt as to the actual powers of the League. On the one hand they are described as being limited to the power "to confer and advise, to create commissions, to exercise inquisitive, conciliative, and arbitral functions, and to help elect judges of the Permanent Court," and as depending for their efficacy on public opinion, arbitration, and the "will to peace." On the other hand the League has been condemned as an agency for making every local war world-wide. One of the principal reasons for the refusal of the United States to join it was the fear of entangling alliances, with the possibility of being forced into a war in which we had no vital interests. In any case the League cannot be considered as a wholly effective preventive of war, for the simple reason that wars have occurred since its inception. The League's arbitral and conciliative efforts may have been beneficial in many instances, but the problem still remains.

Thus, none of the methods proposed or in use have proved sufficiently promising to allay the fears of the world, and the discussion waxes, as highly imaginative writers describe the "horrors" of the next war. The apparent impotence of the present League has caused the revival of the idea of a league to enforce peace. We have heard a great deal concerning the "outlawry" of war, but the idea has not gone beyond a vague phraseology. The latest and most concrete proposal, so far as I am aware, comes from Dr. William McDougall, the psychologist. He urges that the League of Nations revert to its original status as a league to enforce peace, but that its weapon be limited to an international air force. I think it worth while to examine this suggestion for a moment. It is probably typical of a great body of opinion which proposes to cure war by the threat of international retribution.

II

In his preliminary discussion Dr. McDougall examines the causes of war, and concludes that the "central and most immediate cause of war, in which all other causes converge and through which their power to precipitate war is greatly augmented, is the *fear of aggression.* Each nation fears that it may be suddenly attacked and overwhelmed by some other nation or combination of nations; and it is this fear, far more than any other factor, which prompts them to maintain great armed forces."[1]

It is true that fear of aggression leads nations to maintain great armed forces, but that it is the cause of war, can be held only if it is argued that the maintenance of great armed forces is the real cause of war. This Dr. McDougall denies earlier in the discussion, assigning it only a very minor rôle. There are not many people who will agree that fear of aggression is the cause of war. It is a real or fancied aggression itself which furnishes the immediate excuse for war, not the fear of aggression. The immediate cause of a war may be an act of pure aggression, but it is usually impossible to determine this at the time, and war guilt is frequently never definitely determinable. As evidence of this witness the attack on the Treaty of Versailles by the "Revisionists." Moreover the term aggression is far too vague to be serviceable. Wars usually result from the clash of deep seated and conflicting national aspirations, in which it would be impossible for an impartial observer, assuming that one could be found, to decide who was the aggressor.

It does not appear to me that in all the vast literature of war there is an adequate

[1] *Janus—The Conquest of War—A Psychological Inquiry,* William McDougall.

description of its causes. Wars are strictly human enterprises, and they are entered into by the masses of the populations engaged with an enthusiasm which frequently amounts to exaltation. To understand that enthusiasm it is necessary to get at the fundamental psychology of the race. It appears to me that wars are the result of the same human motives which are the causes of all other human institutions. Its roots go as deeply as those of the great truths of religion and political organization and the aspirations of men for better lives. The answer is psychological. Psychology is possibly too controversial at this moment to be able to give a full description of the motives behind every act of man, but it is pointing the way. It can be asserted as a generality that wars are the result of men's ego ideals, of their desire for glorified lives.

Men desire good and abhor evil; not good and evil in the abstract, but particular and personal good and evil things. Ideas of what is good differ among individuals, but there are certain ideas which are common to most of the individuals of a group as homogeneous as a nation. A man's idea of good may embrace only the most sensual of pleasures, or it may ascend through a hierarchy of values to the pursuit of a more or less imaginary ultimate truth and beauty. Each individual sets up some standard of good as an object of attainment. Elements of it may vary from day to day, or month to month, or may persist through a lifetime. It may be false, vicious, perverted, according to the accepted standards, or it may be the noblest of concepts. The behaviorist would say that it was an idea acquired by contact with the environment, and that it could be changed by proper training. Probably so. A complete account would describe its origin in the rewards and punishments visited on the individual by society for social and anti-social acts; in the ideas instilled in the child's mind by parents or others vitally interested in his welfare; and in what the child acquires by contact with people or things which he admires. Such as it is, it is the lever which moves him; it is the power behind the human psyche; it is the stimulus which brings forth its response in adult behavior.

Men are moved little if at all by abstract good and evil. Man acts as a self, and therefore his goods and evils must be related to himself. There is one good to which all men aspire, without any exception whatsoever, and that is self-exaltation. Everyone desires those things which he believes will increase his force, his strength, his worth as a man—in a word, which will glorify his self-hood. We all want to be exalted beings of some kind or another. Most of men's ideas of good center around this desire. Its constituents are desire for liberty of action, for security, for variety of experience, for recognition and response, for personal honor, rank, and attainment, for knowledge and power over the environment, and among the higher types of men, for creative activity connected with the individual's idea of the ultimate nature or purpose of the universe. In imagination, men identify themselves with those things or groups or institutions which contribute to the satisfaction of that desire. All their ideas of good then come to be integrated into an ego ideal, or as Dr. Everett Dean Martin called it, a personality picture founded partly on fact, partly on wish-fulfillment. The adult ego ideal is a picture of the self as one would like to have it; it is an imaginary identification of the self with a certain ideational pattern of good. A man follows that integrated picture like a bright star. It is the instrument whereby he orients himself in a chaotic world. It is the means whereby he is able to choose among the possibilities open to him. He refers his dilemmas to his personality picture, and chooses what he believes the individual he has created in the picture would choose. If some temporary impulse crashes through and causes him to depart from his ideal, he feels a sense of sin and shame. It strengthens, enriches, glorifies his life, and those things with which he has identified himself. It is what he believes himself to be and what life means to him. He will struggle to attain it, will fight for it if necessary, and will often give up his life rather than witness its degradation.

A nation is not a super-ego, a spiritual entity over and above its inhabitants, with aspirations and hopes distinct and superior to theirs. It is simply an aggregation of people under a common political organization. Its good is their good; its behavior their behavior; its motives are only the motives of those individuals among them who can gain the ascendency. The ideal of

democratic government is the ideal of the individual, that is, the good of the people governed. To that ideal the people give their allegiance. In imagination, however, they ascribe to government an individuality of its own. It becomes in the minds of its citizens a superior collective ego with which they identify themselves. A man's thoughts of himself and of his country vary only in degree; they are one and the same; as a member of a great nation he himself takes on greatness. If it has a king, an exalted one of the earth, the humblest subject exalts himself in honoring him. The king, the leaders, the nation as a whole, become integrated into his ego ideal, and remain a part of it as long as he is convinced that they contribute to its attainment. Even should he become hostile to certain leaders, or opposed to certain acts of government, he usually recognizes the temporary nature of his hostility, and does not dissociate himself entirely from the imagined permanent character of the nation. In his mind he and it are still one.

In time a nation takes on a unique character. As an imaginary collective ego superior to the individual, it comes to have in the minds of its citizens an ego ideal of its own, which contributes to the attainment of their individual ideals. It is drawn for the masses of the citizens by the leaders, who must inevitably base the nation's ideals on what is common to the individual ideals. Acts of government (that is, of the nation's leaders) are then approved if they appear to accord with the national ideals. Such acts are concerned with the liberty, security, and prosperity of the citizens, and with the glorification of the national character. When the national ideals are stated in concrete form with reference to a particular situation, they become national policies. It is the statesman's part to shape national policies to accord with the national ideals. They must strengthen, enrich, and glorify the national life. Just as the individual strives to attain his own ideas of good in his private life, so does he expect the statesman to strive to attain the national ideals of good. Should they become persuaded that these are threatened in a vital way, the citizens will fight for them. They will risk their material prosperity and their very lives in support of their ideals, whether these be good or bad according to others' standards, because in these ideals of good lies the whole meaning of life for them.

Plato had something of this in mind many centuries ago. Socrates and his friends were discussing a state in process of creation. No one, he said, is completely self-sufficing. On the contrary we all have many wants, and the state arises out of the need for mutual assistance. The first and greatest necessity is food, then lodging, and the third clothing, and the like. The citizens exchange with one another under the idea that the exchange will be for their good. Each will bring the results of his labors into the common stock.

"Now," asked Socrates, "what will be their way of life? Will they not produce corn and wine and clothes and shoes, and build houses for themselves? They will work in the summer stripped and barefoot, but in winter substantially clothed and shod. They will feed on barley-meal and flour of wheat, served on mats of reeds or on clean leaves, themselves reclining the while on beds strewn with yew or myrtle. For a relish we will give them salt and olives and cheese, and boiled roots and herbs. They will eat and drink in moderation, and thus live in peace and health to a good old age, bequeathing a similar life to their children after them."[3]

"Yes, Socrates," Glaucon interposed, "and if you were providing for a city of pigs, how else would you feed the beasts?"

"Now," said Socrates, "I understand: the question which you would have me consider is, not only how a state, but how a luxurious state is created. In my opinion the true and healthy constitution of the state is the one which I have described. But if you wish also to see a state at fever heat, I have no objection. For I suspect that many will not be satisfied with the simpler way of living."

Continuing the conversation, Socrates and his friends agreed that they would now have to fill their city with a multitude of callings not required by the primitive necessities; with poets, players, dancers, musicians, tutors, servants, confectioners, cooks, and makers of fine dresses, and that they would have to procure gold and ivory and all sorts of materials. To do this they would have to enlarge their borders, for the country which

[3] Quotations abridged from Jowett's translation of Plato's *Republic*.

was enough to support the original inhabitants would then be too small.

"Then," said Socrates, "a slice of our neighbor's land will be wanted by us, and they will want a slice of ours, if, like ourselves, they exceed the limit of necessity, and give themselves up to the unlimited accumulation of wealth. And so we shall go to war, Glaucon. Shall we not?"

"Most certainly," Glaucon replied.

"Then," said Socrates, "without determining as yet whether war does good or harm, thus much we may affirm, that now we have discovered war to be derived from causes which are also the causes of almost all the evils in states, private as well as public."

Plato was right in suspecting that many would not be satisfied with the simpler way of life. He was describing the origin of an economic war. He began with the philosophical assumption that people ought to be satisfied with the simplest of necessities, but that in reality they would tend toward the unlimited accumulation of wealth. In other words, their desires tended to outstrip their achievements; having one good, they could always imagine a better one which then became an object of attainment. If we substitute for Plato's "unlimited accumulation of wealth" the modern conception of the attainment of the ego ideal, we will have a true description of the facts. His assumption at the end as to the "evils" in states was philosophical also, and does not enter into our consideration here.

War is thus not something entirely foreign and inimical to human aspiration, as it is so often described, but is on the contrary the final phase of a struggle to attain national and personal ideals of good which goes on ceaselessly. It has its origin in the individuals who make up the nation. There is no justification for the assertion so often made that the ultimate ideal of the great masses of men is peace or even that they always ardently long for peace, and work for it. There is no such inconsistency as that in human nature. They have often in the past, and will again in the future, desire war as a means to an end, and will devote their whole energies to its prosecution. A modern war is a people's war. Through leaders acceptable to them, they formulate and support the policies which lead to war. If it is to be attacked, it must be through the individuals who cause it. So long as individuals organized into groups are in competition, and nations, races, and creeds set up their elaborate and opposed ideas of good, the possibility of war will exist. So long as it is possible for an organized group to attain an ideal dear to its heart by war, then there will be a possibility of war. It is a mistake to imagine that the nations of the world, or that a majority in any one of the great nations, regard war as always an unqualified curse. Those nations which have survived to this day have a lively memory of liberties won by war, and of great hopes realized. Would each one of the victorious Allies give up the fruits of its victory, if it were possible to undo the World War, and return to the status of 1914? I presume to doubt it. Possibly some would, but not all. For some of them that conflict brought what seems to them a commensurate good, in spite of its evils.

This is not a defense of war as war, but an attempt at a psychologically sound explanation of its causes. Nor is it an indictment of the human race. Man is not considered as inherently good or bad; he is only so by comparison with his own standards. He is merely a certain kind of creature acting in a certain environment in a fairly predictable manner. Nor is it concerned with how men should behave, that is, with any religious or ethical questions, but rather with how we actually observe them to behave.

III

Whatever its causes, it is the theory of many people that force is necessary to prevent war. This is undoubtedly so. Such civilization as we know has been achieved by a slow adjustment to changing conditions. In this adjustment, force has played a part of paramount importance. If men have become better able to live with each other it was largely because they had to. And it was undoubtedly with these ideas in mind that a league to enforce peace was proposed. At first glance, the appeals for an international force to punish war-makers have a certain plausibility. But a closer examination reveals their fatal defects. To return to Dr. McDougall's suggestion, considering it as representative of such proposals:

"The concrete proposal is here made," he

says, "that all nations that have joined the League of Nations shall bind themselves to make, and to permit to be made, for commercial purposes, or to be owned by their nationals, no airplanes capable of a greater speed than 100 miles an hour; and that they shall combine to establish and maintain at the highest point of efficiency an international police force furnished with high-speed planes and all that contributes to make attack from the air irresistibly overwhelming. Such a police force distributed at well-chosen spots could both directly protect any member nation from aërial attack, and by threatening the capital of any nation, could compel submission to the edicts of the authority controlling the police force. What that authority should be may be a matter for discussion, but it would seem clear to me that it should be the International Court of Justice."

Everyone who followed the debate attending the efforts to put the United States into the League of Nations will be familiar with the ideas which operate to render this plan impracticable. They may be sketched in swiftly. In the first place, the refusal of the United States to join the League of Nations, and the practical elimination of the idea of using force by the members of the League, show that the great nations will not consent to it. To do so deprives them of their freedom of judgment and action in matters they consider vital to their welfare, which they will never willingly give up. Even should they consent in principle, they would reserve means for avoiding it should they desire. This is the history of the idea as applied to the League, where there was no real international force, but only one to be constituted in an emergency by contributions from the various national forces. If they were unwilling to do even that, on what grounds can there be any expectation that they will voluntarily subject themselves to the permanent threat of an "irresistibly overwhelming" air force whose control is out of their hands? The answer is that they never will consent to it, and argument and exhortation to that end are futile as long as the world retains its sanity.

If it be assumed for the sake of further discussion that enough nations might consent in principle to the constitution of such a force, who would they trust to control it? Not to any international court, unless their own member had the veto power. In th case all effective control would be lost, f any one of the participating powers co nullify the orders of the court. They wou insist on some sort of provision to this e fect, for there would never be any certain of the absolute impartiality of the court, t that aggression could be justly discerne This would be a most vital concern, in vie of the theoretically irresistible power of th international air force and the speed wi which its attack would be made. And whe it is a life and death matter, nations ca very little for impartiality and justic What they want then is security, and th means to defend themselves. The same ob jections apply to control by any interna tional deliberative body. It is necessary t the success of the plan that the force b strong enough and that it act swiftly enoug to *compel* submission to the edicts of th controlling authority. The great nation will see to it that no external authority ac quires any such powers of life and deat over them.

In view of these facts, it is profitable t consider only one other feature of this pro posal. Could such a force actually be main tained in sufficient power and in such stra tegic locations as to be in a position to com pel submission? The answer will be clea from a consideration of a specific case Peace has now existed between the Unite States and Canada for more than a century they can therefore be used as example without offense to either. The internationa air force is to be distributed "at well-chosen spots" to protect any member nation, and t threaten the capital of any nation which dis obeys the edicts of the controlling authority Where is that "well-chosen" spot in the North American continent? Would the United States consent to its location in Can ada, or Canada to its location in the Unite States? I think not. Possibly it would be on the border. Then comes the trifling question of its commanders and its rank and file. In theory they must be strict interna tionalists, having no emotional ties or anti pathies toward any nation. There are no such persons. It is impossible to imagine for a moment that either country would al low the importation of Frenchmen or Ger mans or Italians, or any one else. There would therefore be on the American side of the border an American force, and on the

other a Canadian force—a perfect balance of air power, and the idea has returned to us with a complete record of futility.

IV

If we grant the truth of what has been said, it does not necessarily follow that the world is doomed forever to frequent martial orgies. Just as all the other elements of civilization have been achieved by a slow adjustment to increasingly complex conditions, so is the prevention of war a matter of slow adjustment. There is no royal road to peace. It seems probable that the threat of war will persist for ages, but that wars themselves will become fewer, and will occur at greater and greater intervals. The constitution of man is dynamic, not static. It is difficult to imagine human institutions as crystallized in form, or political organizations in a perfect state of equilibrium. Among the conditions of life are growth, change, decay. Until the living world becomes static, there will be growth and decay, aspiration and clash of interests, a passionate clinging to the good in life as men see it, a struggle to attain ideals, and the consequent threat of war.

We can, however, imagine a future in which generations will live and die without ever experiencing war. That will come about through the convergence of two things; the first is the increasing destructiveness of war; and the second is the extension of the principle of arbitration.

War was once an incident in the life of a nation, carried on by specialists. A first rate war is now waged by the whole mass of the people. The whole vitality and wealth of the nation is concerned. Greater organization and more ingenious weapons have extended its powers for harm. It consumes wealth at an appalling rate. Within comparatively recent times its weapons were only the gun and the sword. Now they include the gun and the bayonet, mines, torpedoes, bombs, and poison gas, all of increasing power. The airplane, with its bomb and poison gas, may develop so far as to provide a means whereby even a relatively weak nation may do great damage to a stronger opponent. It appears to me that the frightfulness of the "next" war has been greatly exaggerated. But the time may come when no imaginable good to be attained could outweigh the frightfulness of battle. Faced with the possibility of sudden and overwhelming catastrophe, nations will perforce alter their ideals and their policies to provide a minimum clash of interest with others, and turn to battle only as a last resort, in defense of their most prized ideals, preferring at last to accept the chance of annihilation rather than the certainty of degradation. This is the logical evolution of present conditions. So long as each nation sees its neighbors ready to defend themselves effectively, it will hesitate to pursue its own ends too far. It will be willing to live and let live. The Golden Rule will become a fact, and not a theory.

This is the justification for the maintenance of powerful armies and navies, and the basis for the claim that their existence promotes peace rather than that it provokes war. The history of the last half century shows that modern military might also has a more subtle influence for the promotion of peace. Fear of the consequences of war leads to an extension of the principles of arbitration, of international codes, and of amicable adjustment of disputes. In time this may become a habit, and may become incorporated into the behavior patterns, and national and personal ideals, to be departed from more and more infrequently, and only under the stress of what appears to be urgent necessity. The people of America like to believe that that is a part of their national ideal even now. This beneficent rôle of military force is well understood by all save sentimentalists. It is the theory on which responsible statesmen proceed in laying their plans for the military forces, and on which public opinion supports the appropriations.

It is a fact that the events of the past decade have brought only confusion and frustration to those who viewed the war to end war with such high hopes. Public opinion has decisively rejected their proposals. There remains only the highly advertised movement to "outlaw" war. This idea has had a curious history. It was first used to strengthen the idea of a league to enforce peace. Makers of aggressive war were to be declared outside the law, and punished for high international crime. When public opinion became set against covenants to enforce peace, the idea was brought forward with a radically altered meaning. It now became a great *moral renunciation*. War was to be abolished simply

by declaring it illegal; no political or military commitments were in any way involved except an international agreement forever renouncing war. It aimed at a solemn declaration on the part of each nation to renounce war as an instrument of national policy, at the formulation of a new and comprehensive code of international law, and at the creation of another world court to interpret that law. It has since been unalterably opposed to the League of Nations, or, indeed, to any league. In the words of Mr. Walter Lippmann, the phrase is associated with a "perfect record of irreconcilability."

"We find," he says, "that the phrase was first employed in order to strengthen a League before there was a League. It was used to defeat the League after there was a League, and to advocate an international court before there was a Court. Now that the Court has been created, it is being used to defeat the Court, and to advocate another court which does not exist."

Out of all this confusion there arises the strange spectacle of the leaders of the universal peace movement battling among themselves for the supremacy of opposed ideas. We hear Mr. H. G. Wells deriding "outlawry" in terms of cynicism and disillusionment. And we hear its advocates asserting that it is "outlawry" or nothing. Students of international relations will have no hesitancy in predicting that the present campaign to "outlaw" war between sovereign states will end in the usual documents providing for arbitration, with reservations that exclude practically all the subjects that might give rise to friction between states, and that the movement will finally merge completely into the older ideas of arbitration and conciliation.

It is futile to expect universal peace through the agency of some magic institution created overnight at the theorist's study table. It is also futile to believe that men can be changed from patriots to internationalists by exhortation or argument. So far is the world from becoming internationalized that the peacemakers at Paris after the World War listened to the demands of many small nationalities for independence, and found it expedient to comply with some of them. The spirit of nationalism is growing, not diminishing. It can be guided toward adequate concepts of benevolence, sympathy, and understanding for others, and must be kept from a narrow and provincial chauvinism. So long as a man believes in the ideals of his country he will have a passionate attachment to it. That attachment may be made productive of the highest good of which he is capable, for himself, for his countrymen, and for the world.

What, then, will be the attitude of the healthy state? It will seek to promote the welfare of its inhabitants. In its dealings with other nations it will be animated by the spirit of fair play, knowing that that is for its welfare as well as for theirs. It will look to its ideals, and shape its policies to that end. It will desire peace, and to that end it will not neglect its obligation to provide for its own defense, realizing that it cannot shift that responsibility to any other institution.

Engineering Forms *for* Destroyers

By LIEUTENANT COMMANDER J. W. REEVES, *U. S. Navy*

GENERALLY speaking, destroyer engineering practice in our Navy is now, and long has been, mediocre, and energetic action ought to be taken to improve it. This is assertion, not proof. Proof may be had by comparing records of efficiency on acceptance trials—pounds of oil per shaft horsepower per hour—with the latest efficiency records of the best destroyers in each class. Comparison should then be made between the present efficiency of the best destroyer in each class and the efficiency of all others in the class.

It is not maintained that all vessels are in poor mechanical condition, dirty, and indifferent as to operating practice; there are those that are well kept, clean and relatively efficient. But that is no more than all ought to be. Every ship contends to some degree against obstacles such as indifferent machinery design, results of previous neglect, crowded operating programs, and insufficient or incompetent personnel. Men are discouraged when the obstacles are particularly severe. They know in their own minds the unsatisfactory nature of the results, but feel that they did their best. Yet let someone else state that results are unsatisfactory, and this statement is considered entirely as a reflection or an intimation of neglect. It is not beyond the bounds of possibility that there are in some cases grounds for such an imputation, but that phase is not here under consideration.

There is something far more important than the praise or blame of the individual. Destroyers were designed and built to have certain fundamental qualities which they were required to demonstrate before they were accepted. Have these vessels been operated, and are they now being operated, in such a manner that their original qualities are preserved intact? Are they now able to do the things that they were built to do, and that they were once capable of doing? It is a matter of record that many ships fall behind the leaders in their class by one to two knots in speed and thirty per cent or more in cruising radius. Can it be denied that these vessels have failed to keep intact their original qualities and that their performance is unsatisfactory and inefficient? Inefficient operation persisted in is a deliberate and neglectful waste of public funds provided for the Navy. It leads inevitably to impairment of the strategical and tactical qualities which were built into these vessels and which it is the duty of all concerned to maintain or develop.

Efficient engineering, as a matter of theory or abstract principle, is extremely important, for on it depends the maximum in sustained speed or in cruising radius. It is obvious that a destroyer formation, having the advantage of speed over another similar formation, can out-maneuver it and maintain the advantage of position, which, other things being equal, will inevitably give victory to the faster group. The speed of a formation is the speed of the slowest ship, hence the laggards delay not only themselves but all others as well. The advantages of speed and cruising radius give to a destroyer formation a greater choice of search plans and of speed; ability to cover more area and to concentrate more promptly; and greater latitude as to when and how often to attack. In short it is recognized theoretically that speed and fuel endurance may dominate the strategy of a campaign even as they do the tactics of a battle. Yet actually the falling off in these qualities, speed and fuel endurance, appears to be lightly regarded.

The removal of every obstacle to engineering efficiency does not lie in the power of a destroyer commander. It does lie in his power, however, to appraise correctly the importance of engineering, and to operate the machinery of his vessel in an intelligent manner so that the results may be accurately known, not merely guessed at. For the intelligent operation of marine machinery it is essential that an accurate record be made of the existing conditions, which by analysis

SHIP..... No. ENGINEROOM DATE.....

Time	No. of Nozzles	Steam Pressures (Gauge)					Vacuum	Temperatures					Aux. Exhaust	Air Pumps D. S.	Counter Readings	Average Counter Readings
		Main Steam	H. P. Chest	First Stage	I. P. Chest	L. P. Chest		Exhaust Trunk	A. P. Discharge	Overboard	Injection	Hot Well				

SHIP..... No. FIREROOM DATE.....

Time	No. Boiler		No. Boiler		Size of Tips	Oil Pressure	Oil Temp.	Blowers			Air Pressure	Feed Temp.	Oil Meter Readings	Exp. by Soundings
	Steam	No. Burners	Steam	No. Burners				Steam	No. Nozzles	R. P. M.				

SYNOPSIS OF RUN

Ship ..... Date .....

Speed .....
R.P.M. .....
Displacement .....
Sea .....
Days out of dock.....

Gals. per hour .....
Gals. per knot .....
Radius (112,000 gals.) .....
Score .....

No. nozzles .....
Main steam .....
H.P. steam chest .....
First Stage .....
I.P. steam chest .....
L.P. steam chest .....
Vacuum .....
Exhaust trunk temp. .....
A.P. discharge temp. .....
Inject. temp. .....
Overboard temp. .....
Hot well temp. .....
Exhaust pressure .....

Air pump D.S. .....
Boiler steam .....
No. burners .....
Size tips .....
Oil pressure .....
Oil temp. .....
No. blowers .....
No. nozzles .....
Steam to blower .....
R.P.M. blower .....
Air pressure .....
Feed temperature .....

and comparison with previous records will show the efficiency attained. Continued experiment along this line will give, what may be called until they are bettered, standard performances at various speeds. They should be sufficiently close together so that the record will be practically continuous throughout the speed range. This is not a laboratory method. It is entirely practical and essential to an exact knowledge of the results obtained and wherein they can be improved.

On the average destroyer when a standard speed is set, the engineroom knows the number of the R.P.M. required; has a more or less accurate idea of the steam pressure in the initial turbine stages, and a very general idea of other engineroom conditions. In the firerooms there is known approximately the number of burners required, the oil pressure and, in a general way, the blower requirements. Except as to the R.P.M., dependence is usually placed on the memory of the operators. It is obvious that without exact knowledge as to what the conditions should be, and with no accurate checking up as to what the conditions actually are, the results obtained can hardly be otherwise than indifferent. At low power the auxiliaries use a large percentage of the total power generated. A loss of ten or fifteen percent in each auxiliary, which would be difficult, if not impossible, to detect by the eye, would mean a considerable loss in over-all efficiency. In the boiler room, which is first in importance but usually last in the amount of supervision and attention given to it, poor atomization or excessive air pressure, even though so small as not to be readily detected, will reduce the over-all efficiency by a large amount. It is not enough to look at a pump and decide that it seems to be running at about the right speed. It is necessary to know the exact number of double strokes per minute and the discharge pressure, as well as the number of strokes and the pressure which are necessary under these conditions as shown by the records of "standard performance" of this vessel or of the best vessel of the class.

No doubt some few destroyers now collect very complete data. It is believed that the great majority collect little or none that is of any value. If they do, their performances do not indicate that any use is made of it. Objection is frequently made that operations usually preclude the taking of data, except on rare occasions when steaming alone at a steady speed. Unquestionably the best data can be obtained after being steadied down on a certain speed for several hours. But those who realize the importance of this matter train their personnel accordingly, and find it possible to take accurate data at any time when the ship is not maneuvering. For higher speeds it is necessary to have a special detail of data takers from other than engineering ratings. These men should be selected for this duty and carefully trained in it. It is desirable to use these men even at lower speeds when special accuracy is necessary. However, the regular watch can eventually be trained to collect data without neglecting their other duties. The act of noting and recording the readings of a gauge thermometer, or meter, at a certain time seems simple enough. Yet it is surprising to find that even among the most intelligent men there will be many who cannot be depended on to do it correctly. It cannot be emphasized too strongly that until data takers become experienced the greatest care in their instruction and supervision is necessary. Much of the data collected is not only useless but actually misleading because sufficient attention has not been paid to this point.

The necessary forms for recording data can be typed or, better, made out in pencil. As a guide there is given on the opposite page a form for engineroom data, one for fireroom, and a synopsis sheet. With minor changes in headings of steam-to-main-turbine columns they will fit any machinery plant. Columns may be added if the gain justifies the extra work, but it is believed that none can be omitted without sacrificing necessary information. After a run the synopsis sheet should be filled out and filed as part of the ship's permanent records.

The Practicability *of* Disarmament

By Lieutenant Commander Sidney Ballou, *U.S.N.R.*

(Submitted as Report of the Section on National Defense, Commonwealth Club of California)

Types of Disarmament

THE occurrence of frequent wars among civilized nations, each constantly professing a profound desire for peace, is a paradox which has challenged the attention of men for centuries.

Viewed as a whole, mankind is almost continuously at war. The years are exceptional during which there is no organized fighting in some quarter of the globe. Since the close of the World War, there has been a war between Russia and Poland, between Greece and Turkey, between Spain and the Riffs, between France and the Riffs, between France and the Syrians, and almost continuous civil war in China. If we go back only to the beginning of the present century the list is so formidable that few men would be able to name half the conflicts involved. These have occurred in the face of an almost universal belief on the part of thinking man that war is a tragic, horrible, wasteful, unnecessary, and futile method of settling disputes.

The proposed cures for this evil are legion. Prominent among them is the suggestion of disarmament. It is argued that as wars are fought with weapons, a lack of those weapons would abolish, or tend greatly to diminish, the occurrence of war. It is with the practicability of disarmament, either wholly or in part, that we are now concerned.

There are three distinct theories of disarmament. First, disarmament by example or individual disarmament; second, disarmament by agreement; and third, disarmament, conditional on agreements for security.

Disarmament by Example

There are not wanting those who, in their passion for peace, advocate an immediate and drastic reduction in the Army and Navy of the United States, independent of the action or the attitude of any other power. Indeed, the theory upon which this is based has had exponents in high position. Jefferson tried passive resistance and non-intercourse as a reply to British and French aggression against our shipping. Buchanan met the impending crisis caused by the election of Lincoln in the same spirit. In our own day, with half the world ablaze with the great World War, President Wilson, while not advocating actual disarmament, pursued a policy of non-preparedness in connection with his efforts to find a peaceful solution. In none of the cases cited was the actual conflict averted. In all of them there is room for opinion that vigorous armament might have produced a different result.

In contrast with the three peace loving presidents above named, probably the most truculent of our presidents were Roosevelt and Jackson, with Cleveland, perhaps, not far behind. None of these actually involved us in war, nor left a heritage of war.

Historically, therefore, neither disarmament nor its milder form of unpreparedness has served the purpose of preventing war. It is difficult to work out a reasonable theory as to why it should. The first argument usually advanced is that talking about war somehow causes it, as to which it is sufficient to say: first, that it presupposes a childlike state of mind usually outgrown by boys in their early teens; and, second, that it does not meet the first test of a theory, that is, it does not correspond with any observed facts.

The second argument is that possession of military power incites to its use. This has more plausibility, though it is difficult to cite an instance where it would be applicable to a democracy. As applied to an autocracy, it is merely an instrument for an underlying and more fundamental cause.

The chief causes of war in the past have been the ambition of rulers, the conflict of national policies, the pressure of population on territory, and the desire for things in the possession of other nations, chiefly territory, including colonies, and trade. Preparatory to deliberate war for any one of those causes, military power is usually built up, but it is the instrument and not the cause.

Added to these must be mentioned the chief cause for justifiable war, revolt against oppression or injustice. Here the material factors of military power are usually lacking and success, when attained, has been due to the spirit of the people and other imponderables. An outstanding example is the American Revolution.

There is one feature of individual disarmament which is seldom discussed, and that is its effect on the more practical question of disarmament by agreement.

The notion that if any nation should spontaneously disarm, its example would quickly be followed by any or all the others, is of course wholly chimerical. No such effect has been observed in all history. It is not generally realized, however, what an effective bar such action is to the obtaining of real progress along the lines of concerted agreement. There is, perhaps, a general idea that the voice of a weak nation counts but little in a disarmament conference, but two recent examples make clear the extent of that limitation.

At the Washington conference on the limitation of naval armaments, the way was blazed by the United States which had built and was actually building a navy fully fifty per cent stronger than its nearest rival. The opinions of the United States were listened to with respect and the main items of its program adopted. Present was France, still one of the greatest powers so far as total military strength is concerned, but which had been forced by the exigencies of the World War to let her naval strength sink to low ebb. France was not even consulted when the 5-5-3 ratio was agreed to by the United States, Great Britain and Japan and her own ratio of 1.75 was determined. When she objected to the figure assigned, she was read a sharp lecture by Secretary Hughes and was forced reluctantly to accept the battleship ratio, while blocking agreement as to lighter craft.

Now turn the picture around and imagine the United States at a land disarmament conference. It is necessary only to quote the following significant paragraph from President Coolidge's original call for a five-power conference which finally resulted in the three-power conference of June last:

> The American army and air force are at minimum strength. Agreement for land and air limitation in other regions of the world would not be dependent upon the reduction or limitation of American land and air forces. Therefore, the American Government does not feel that it can appropriately offer definite suggestions to other powers in regard to elimination of these categories of armament.

This can only mean that disarmament by example, so far from being a vantage ground from which the good exemplar can call upon the other nations to follow its lead, actually operates as a practical bar, even to diplomatic suggestion that others do likewise. Being already disarmed on land, we have no business at a land disarmament conference.

Disarmament by Agreement

Along somewhat more practical lines are attempts to reach disarmament by agreement. These have frequently been suggested from responsible quarters, for example, the Tsar's call for the first Hague conference in 1898 and Article 8 of the Covenant of the League of Nations. Corresponding attempts have been made in this direction, but if we distinguish a somewhat similar but actually different line of endeavor, we shall find that disarmament by agreement, in its pure form, has thus far proved futile.

The matter to be distinguished is Limitation of Armaments by agreement for the purpose of preventing ruinous competition.

To insist that the Washington Conference, for example, was a limitation of armaments and not a disarmament conference may seem hypercritical, yet the difference is far reaching and fundamental. Disarmament conferences are based on the theory that the less military force is possessed by the nations concerned, the more likely they are to enjoy the blessings of peace. Limitation of armaments conferences are based on the theory that competition in armaments may be pushed to a costly and dangerous extreme, and that, armament being relative, adequate military power

may still be retained at a less expensive level. The underlying idea of a limitation of armaments conference is not an altruistic advance toward peace but the more homely virtue of economy.

Twice during the period preceding the Washington Conference did Secretary Hughes find it necessary, in order to allay extravagant expectations, to issue public statements alluding to this difference. At the conference none of the great sea powers concerned showed the slightest inclination to surrender adequate naval force. The maintenance of navies built around fifteen battleships, each replaceable as soon as it is twenty years old, is not disarmament. The conference, moreover, provided for the building in liberal numbers, of a new and powerful type of warship, then only in its experimental stage, the aircraft carrier.

While no general disarmament agreement has yet been reached, it is sometimes urged that at least one restricted arrangement of this kind is in force and has proved successful. This refers to the treaty forbidding fortification of the United States-Canadian boundary. The argument relating cause and effect loses much of its force through the fact that a similar policy is in force on the Mexican border as to which there is no treaty. Evidently, the factor of agreement is not the decisive one.

After distinguishing Limitation of Armaments, there remains no actual accomplishment of disarmament by agreement. After excessive or competitive armaments have been sloughed off by limitation agreements the argument that the possession of military force is provocative of war loses much of its force. Further attempts at reduction are avowedly in the interests of economy rather than on the theory that they make for peace.

In recent years, Geneva has been the scene of the most comprehensive and consistent effort in human history to find a formula for disarmament. A review of the voluminous publication of the reports and speeches on this subject shows that no one ever believed in individual disarmament, for the hope of example or otherwise, and that with the crystallization of ideas, even disarmament by agreement in its simple form is no longer advocated. Statesman after statesman has recorded his views that the only practical line of endeavor is along a third course, that is, disarmament conditional on agreements for security.

DISARMAMENT CONDITIONAL ON AGREEMENTS FOR SECURITY

This introduces new factors in the situation. If there are to be agreements for security, what shall be their form and conditions? By whom shall they be made? How are they in turn to be enforced and how far can they safely be relied upon?

A discussion of the difficulties arising from these questions would take us too far afield. It is sufficient to point out that the insistence on agreements of this kind as a pre-requisite is a denial of the theory that disarmament is conducive to peace. We are back to a recognition that force of some kind is necessary and the problem becomes one of transferring the force from individual nations to collective hands under some satisfactory form of control.

Some of the difficulties may be briefly indicated. It was urged in some quarters that the League of Nations was intended to furnish and administer the necessary collective force. It was as vigorously argued that no such intent was deducible from the language of the Covenant. At any rate, an attempt was made in an agreement, called the Geneva Protocol, to stiffen up the language of the Covenant in this respect, asking the nations to indicate and agree upon just what forces they would furnish. The failure to ratify this protocol brought out the inherent weaknesses of the plan. If the collective force is to be effective, it must be capable of being quickly summoned and readily available. To this end, the necessary machinery must be executive, free from checks and balances and from that deliberation which would give opposition opportunity to delay and block. Thus constituted, it became too powerful to be safe or desirable. Specifically, for example, Great Britain declined to put her fleet at the disposition of a small international committee over which she had no veto.

Finally, in the case of representative governments, now in the great majority among nations, it is hard enough to get nations to go to war in their own behalf. There is always a powerful opposition ready to seize upon any indication of unpopularity. The recognized necessity of propaganda to arouse the necessary war enthusiasm is the

despair of pacifists, but it really indicates the reluctance with which democracies go to war. Under such circumstances, it has been found impracticable for a government, however altruistic its motive, to agree to send even a part of its regular force with a chance of being killed over a dispute in which the nation is not immediately interested.

Other forms of security as a condition precedent to disarmament have been discussed at length, but no satisfactory solution has yet been found.

Defining Disarmament

In the meantime, however, a great deal of attention has been given to the other branch of the problem; the question of disarmament itself. A technical commission of the League, with delegates from the United States in active participation, has held sessions over a period of more than two years. At the present time this commission is in adjournment, having failed to agree upon any of the essential fundamentals of the problem. The American delegation has described the divergent views as irreconcilable.

What is disarmament? In academic form, a report on the practicability of disarmament would have opened with a definition of the main term. We have preferred to follow the historical development, which is that the subject has been considered and debated for centuries before anyone seriously attempted to sit down and agree upon what facts would constitute disarmament. That attempt has now been made and up to date has been a total failure.

Disarmament is obviously the negation of armament, and the World War brought home to everybody the fact that armament is the sum total of the resources of the country. It is necessary to have men at the front. They must be armed with weapons of almost innumerable kinds. They must be trained, to some extent at least, if they are to be in the least efficient. They must be supplied endlessly with ammunition and replacement of weapons. They must be furnished enormous quantities of food. The means of transportation of food and supplies must be certain. If the functioning of any of these factors breaks down the war is lost.

This is a formidable chapter of matters to be dispensed with if we are to have no armament. It is only the opening chapter.

The means to create armament is even more vital than the possession of the quantity necessary to begin a war. The Allies won the World War with what they thus created, which was a thousandfold greater than any they had previously possessed. Supplies of raw material thus become a most important factor. The ability to produce food must be considered. Factories of all kinds must be reckoned with. A shipyard is just as much armament as a battery of heavy guns. A dye factory is potent with possibilities. In a conflict between nations with no material armament whatever, the mere existence of a preponderant population would in the last analysis be decisive. It is no wonder that the Preparatory Disarmament Commission became lost in the maze of possibilities, of claims and counterclaims, of suggested standards that had no common denominator.

Disarmament and Peace

It is obvious that total disarmament is an impossibility, and that the word "disarmament," as commonly used, means merely the getting rid of some of the scientific and expensive means of killing developed in the past fifty or a hundred years.

If this is all that is meant by disarmament, it is not at all apparent that it is in any way conducive to peace. If we may imagine the nations reduced to that state of military impotence represented by smooth bore guns of a few hundred yards range, with wooden navies dependent only on the wind for motive power, we have not in the least limited the tendency of mankind to war. Men fought when they had stones and clubs for weapons, they fought for hundreds of years when they had only swords, spears, and bows.

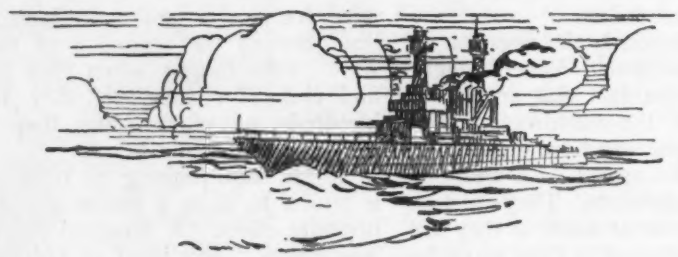
So far from limiting the tendency to war, a return to such a status would have the opposite effect. A hundred years ago war was cheap. Any band of pirates could fit out a warship of respectable fighting strength and make war on the commerce of the world. The Barbary powers could do the same thing on a larger scale. Those nations whose religion enjoins its spread by fire and sword were seriously to be reckoned with. Four times was Christian civilization all but swept from the face of

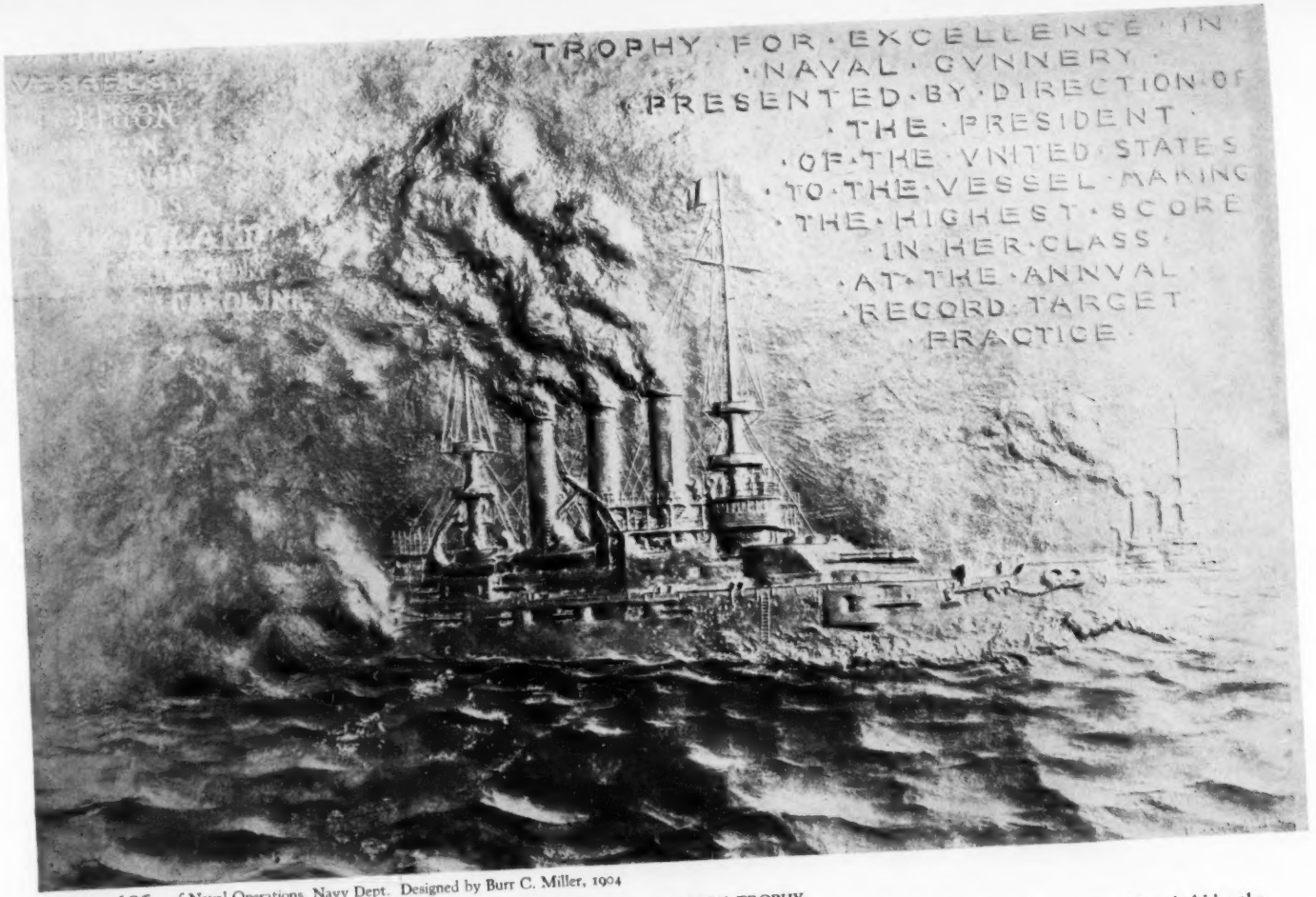
Europe. Attila was finally defeated at Chalons (A.D. 451); the Moors, at Tours (732); Jenghiz Kahn, at Wahlstatt (1241); and the Turks, at Vienna (1638). Had any one of these decisive battles been a victory for the invader, Europe would have ceased to be the cradle of the civilization that we have inherited.

There are probably few to take issue with the proposition that the civilization represented by the Christian white races has, in spite of its imperfections, done more for human progress and security and secured a greater sum total of human happiness than any form of society that has existed on earth. That such civilization is now the dominant force of the world is due solely to the ability of the white man to out-think the other races of the world in scientific means of killing his fellow man by land and sea. That such thought is unpleasant by no means detracts from its truth. That such power has been often abused is unfortunately true. The fact should be kept in mind, however, when it is proposed to make war so cheap that all the backward nations may once more indulge in it. There are some notable advantages in keeping war expensive.

The failure of the Geneva three-power conference is too recent to need recapitulation. It followed closely upon the failure, less frankly admitted, of the general disarmament conference under the auspices of the League. A significant fact is that at the general conference it was England, Japan, and the United States that stood together against France and a bloc of continental powers, yet when the three sea powers tried to settle their own difficulties they were found equally insoluble.

To those who consider disarmament synonymous with peace, these failures are, of course, deplorable. A less pessimistic view, however, follows from the theory that the conferences were held in the interests of economy rather than of peace. That this was the view of the negotiators themselves hardly can be doubted. As Admiral Jellicoe bluntly said, "Nations can fight just as well with small navies as with big ones." A sincere conviction that the issue of world peace was involved might have led to some real sacrifices being made. That conviction was lacking. The failure of these conferences, therefore, was due, first to the inherent impracticability of disarmament, and second to the lack, upon close analysis, of any reasonable foundation for the belief that disarmament is conducive to peace.




TROPHY · FOR · EXCELLENCE · IN
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· TO · THE · VESSEL · MAKING
· THE · HIGHEST · SCORE
· IN · HER · CLASS ·
· AT · THE · ANNVAL ·
· RECORD · TARGET ·
· PRACTICE ·

Courtesy of Office of Naval Operations, Navy Dept. Designed by Burr C. Miller, 1904

BATTLESHIP GUNNERY TROPHY

Presented each year by direction of the President of the United States to the battleship making the highest score in gunnery. Now held by the U.S.S. *West Virginia*.

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BATTLESHIP ENGINEERING TROPHY

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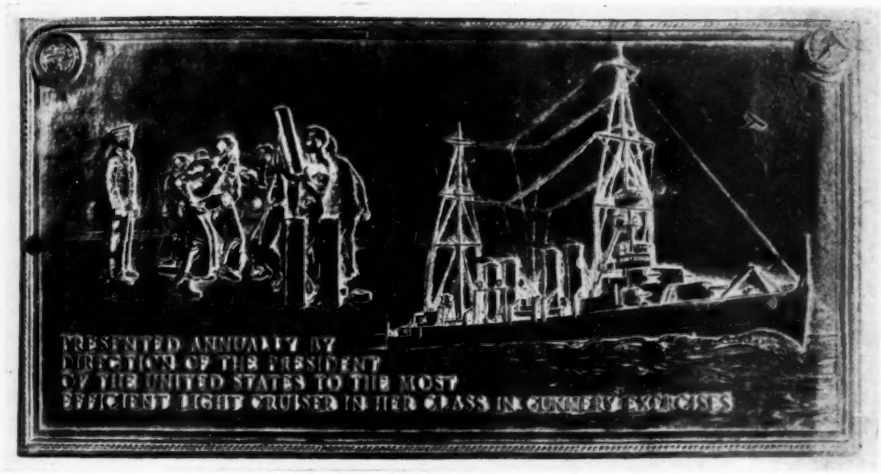
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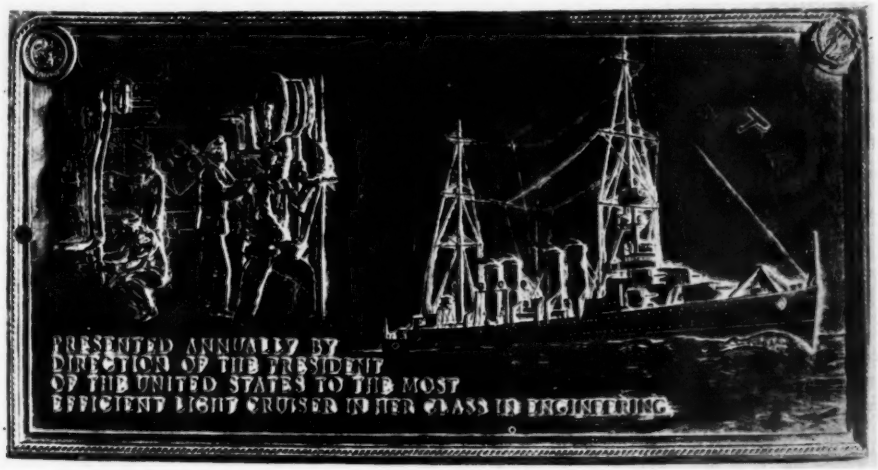
OF THE UNITED STATES TO THE MOST
EFFICIENT LIGHT CRUISER IN HER CLASS IN GUNNERY EXERCISES

LIGHT CRUISER GUNNERY TROPHY

Presented each year by direction of the President of the United States to the light cruiser making the highest score in gunnery. Now held by the U.S.S. *Omaha*.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OF THE UNITED STATES TO THE MOST
EFFICIENT LIGHT CRUISER IN HER CLASS IN ENGINEERING

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TROPHY PRESENTED ANNVALLY BY DIRECTION
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VESSEL IN HER CLASS
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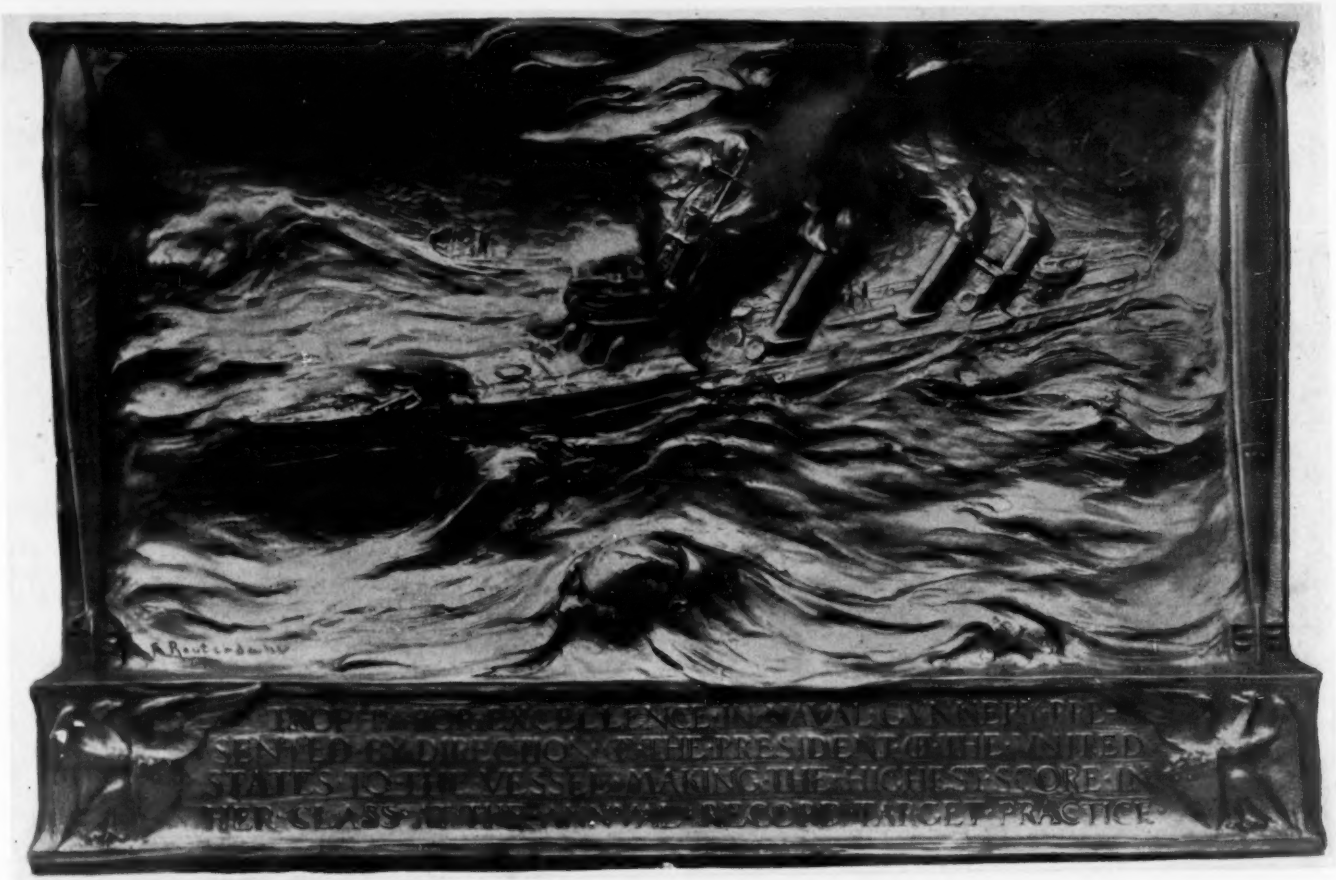
CRUISER ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the cruiser making the highest score in engineering. Now held by the U.S.S. *Pittsburgh*.

Presented each year by direction of the President of the United States to the cruiser making the highest score in engineering. Now held by the U.S.S. *Pittsburgh*.



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DESTROYER GUNNERY TROPHY

Presented each year by direction of the President of the United States to the destroyer making the highest score in gunnery. Now held by the U.S.S. *Robert Smith*.

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DESTROYER ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the destroyer making the highest score in engineering. Now held by U.S.S. *Decatur*.

PRESENTED ANNUALLY BY
DIRECTION OF THE PRESIDENT
OF THE UNITED STATES TO THE MOST
EFFICIENT MINELAYER IN HER CLASS IN GUNNERY EXERCISES

MINE LAYER GUNNERY TROPHY

Presented each year by direction of the President of the United States to the mine layer making the highest score in gunnery. Now held by the U.S.S. *Shawmut*.

PRESENTED ANNUALLY BY
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VESSEL IN ENGINEERING IN THE MINE SWEEPER CLASS

Courtesy of Office of Naval Operations, Navy Department

MINE SWEEPER ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the mine sweeper making the highest score in engineering. Now held by the U.S.S. *Whippoorwill*.

PRESENTED ANNUALLY BY
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AIRCRAFT GUNNERY TROPHY

Presented each year by direction of the President of the United States to the aircraft squadron making the highest score in gunnery. Now held by VT-squadron 2.

TROPHY FOR EXCELLENCE IN TORPEDO
PRACTICE, PRESENTED ANNUALLY BY THE
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STATES TO THE MOST EFFICIENT VESSEL
IN HER CLASS

Courtesy of Office of Naval Operations, Navy Department

SUBMARINE GUNNERY TROPHY

Presented each year by direction of the President of the United States to the submarine making the highest score in gunnery. Now held by the U.S.S. *R-15*.

Presented each year by direction of the President of the United States to the aircraft squadron making the highest score in gunnery. Now held by VT-squadron 2.

Courtesy of Office of Naval Operations, Navy Department

SUBMARINE ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the submarine making the highest score in engineering. Now held by the U.S.S. *R-6*.

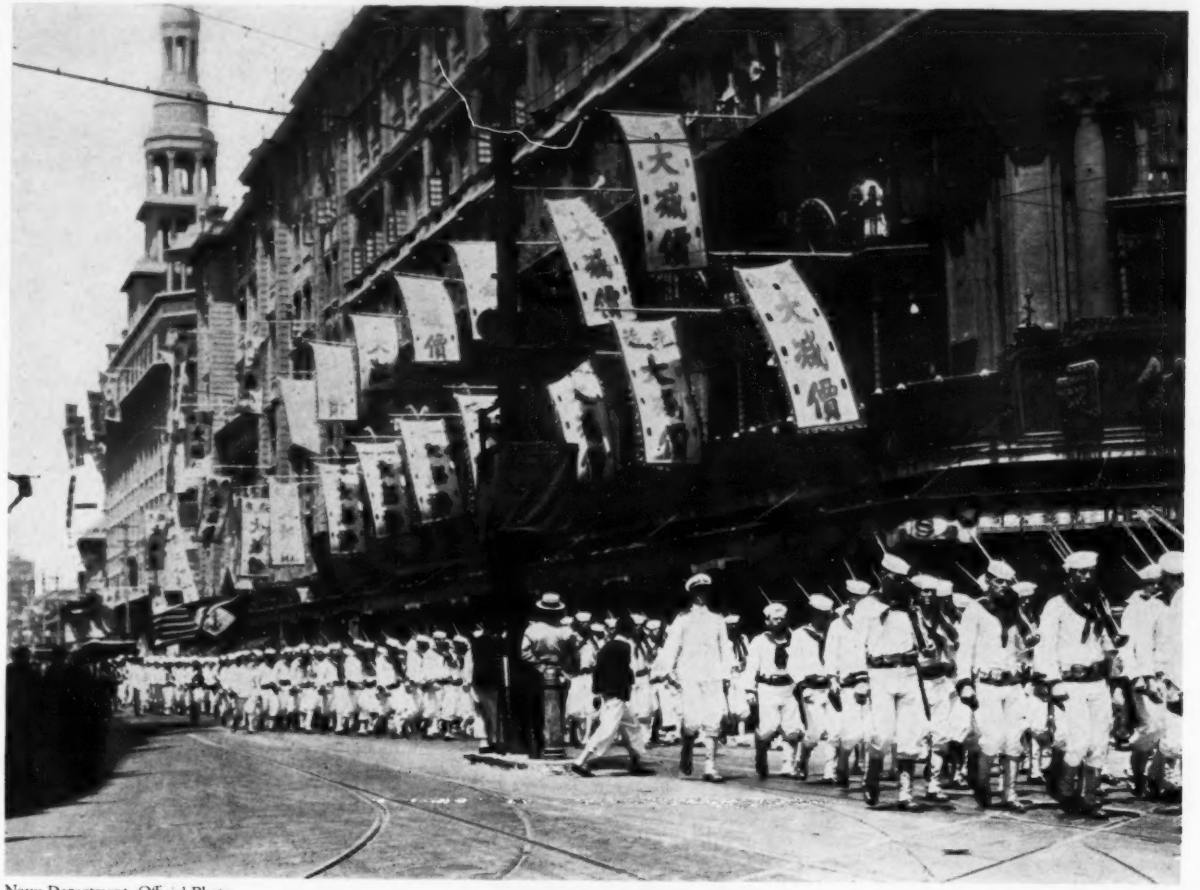
SUBMARINE ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the submarine making the highest score in engineering. Now held by the U.S.S. *R-6*.

Navy Department Official Photo

ON GUARD

Bluejackets in position to repel attack on Foreign Concession, Shanghai, China.



Navy Department, Official Photo

"SHOWING THE FLAG"
Bluejackets returning from Bubbling Well Cemetery, Shanghai, China.

SHOWING THE FLAG

Bluejackets returning from Bubbling Well Cemetery, Shanghai, China.

Navy Department, Official Photo

PATROLS ON THE BUND, SHANGHAI, CHINA

Two reasons why American lives are safer in China.

Navy Department, Official Photo

"WATCHFUL WAITING"
Barricades in the streets of Shanghai.

Barricades in the streets of Shanghai.

Navy Department, Official Photo

"THREE MUSKETEERS"
Bluejackets guarding the International Settlement at Shanghai.

NEAR THE MING TOMBS, NANKING, CHINA
The bluejacket is always ready to see the sights.

Navy Department, Official Photo

Operations *of the* United States Navy *on the* Yangtze River—September, 1926, *to* June, 1927

By Lieutenant Commander Glenn Howell, *U. S. Navy*

NEAR THE MING TOMBS, NANKING, CHINA
The bluejacket is always ready to see the sights.

Political Background

During a period of some years, conditions throughout China and particularly along the Yangtze Valley have been steadily growing worse. The anti-foreign outbreak of 1925 appeared ominous upon its surface, but the agitation so suddenly and mysteriously created at that period soon subsided. China is full of foreign optimists, Americans and Europeans, who still believe in fairies and in Santa Claus in spite of the very legible handwriting on the wall. These optimistic souls promptly accepted the subsidence of the anti-foreign agitation as a sure indication that all trouble was at an end and that a pleasant, placid future lay ahead. The Yangtze Valley remained for a period of some months in the main divided between Wu Pei Fu and Sun Chuan Feng, oldtime warlords, who comfortably starved the populace to pay the bills for their parasitic—literally as well as figuratively—soldiers. The foreigners were not bothered by these warlords, who were content to permit business to go ahead and who occupied themselves with efforts to confiscate as many as possible of the revenues properly belonging to the Peking government.

During the summer of 1926 the Cantonese came over the mountains from their native province of Kwangtung and overran the province of Hunan. They were checked for a time by Wu Pei Fu's troops in the vicinity of Yochow, almost within sight of the Yangtze. But Wu was far to the northward engaged in a vain and useless attempt to drive his northern enemy, Feng, out of the country. Too late, the old general hurried by train back to the Yangtze. His troops, underpaid, improperly fed, tempted by Southern gold and fair promises, gave way in all directions. In the latter part of August the Cantonese took Yochow and hurried on toward their first goal, the wealthy Han cities—Wuchang, Hanyang, and Hankow, grouped about the junction of the Han River with the Yangtze.

In early September the Cantonese attacked and captured Hanyang and Hankow, and Wu Pei Fu fled with his defeated and disorganized troops to the northward. He has never returned.

The siege of Wuchang by the Cantonese continued for over a month, but on October 10 this city fell, and since that time the three Han cities have remained in the undisputed possession of the Cantonese.

Shortly after the capture of Hankow the Cantonese set up a government at Hankow which they called the "Nationalist" government. This government was directly under the control of the Kuomintang party and was largely subservient to this organization. It was headed by its Minister for Foreign Affairs, a Trinidadian of mixed Chinese and negro blood named Eugene Chen, a man of education and a varied, stormy career. Borodin, a Russian of pronounced communistic and Bolshevik ideas, from its inception served the Nationalist government as its adviser. It is hardly necessary to state that from the beginning this group was pronouncedly communistic and anti-foreign in its ideas. The leading generals in command of the operations of the Southerners were Chiang-Kai-Shek and Tang-Sen-Chi. Both were and are efficient.

The military policy of the Nationalists is invariably the same, viz.: first, to undermine the morale of the opposing troops by propaganda; second, to purchase the alle-

giance of the commanding generals of such troops; and third, to attack and carry territory nominally under enemy control, the actual fighting usually accompanied by comparatively little bloodshed.

Proceeding on these principles, the Nationalist forces during the months succeeding the establishment of their government at Hankow gradually worked their way down the Yangtze to Shanghai. Long before they reached this great port they had captured or otherwise obtained the allegiance of practically all generals to the westward of Hankow with the exception of Yang Sen, who operates in western Hunan and Szechwan.

In every port, coincident with the arrival of the Cantonese came anti-foreign troubles, labor difficulties, and at some points actual anti-foreign outbreaks. The Russian advisers of the government succeeded in remarkably short periods of time in undermining completely the former industrial systems and gained their object in creating tremendous and insuperable obstacles to foreign trade.

In early September in the midst of the confusion and panic in the Han cities the engagement at Wanhsien between British naval forces and Yang Sen's troops took place, and there promptly resulted a strong wave of anti-foreign feeling throughout Szechwan and the evacuation from that province of many foreign women and children and some men.

It proved impossible for a government of Soviet sympathies and communistic tendencies to live in peaceful close proximity to the foreign concessions at Hankow. Bitter, prolonged, and poisonous propaganda directed at the British in this centrally located port produced inevitable results. On January 3 there began a series of riots at Hankow which culminated in the evacuation of nearly all American and British women and children from this port and ultimately in the handing over of control of the British concessions to the Chinese. Coincident with the loss of this concession occurred the turning over of the British concession of Kiukiang to the Chinese authorities there. The British concession at Chinkiang ultimately had to be abandoned, but its control has never been turned over officially to the Chinese.

On March 23 the Nationalist armies captured Nanking. Upon the entry of the Nationalist soldiers into Nanking, they instituted a preconceived, deliberate attack upon all foreigners, murdered one American, two British subjects, two Japanese, one Frenchman, and one Italian, and included the American, British, and Japanese Consulates in their attack.

The Nanking outrage precipitated an almost complete evacuation on the part of all foreigners from ports above Hankow. Consuls were withdrawn, and foreign gunboats left their stations with the last of the evacuees. Hankow remained in its usual status except that all American and British women and children and all nonessential men evacuated the port. The Americans and British who remained were concentrated at points upon or near the Bund, and kept in readiness to evacuate to war vessels at a moment's notice. All Americans and British, except one or two representatives of each important firm, evacuated the ports of Kiukiang, Wuhu, and Chinkiang. All foreigners completely evacuated Nanking. All missionaries were recalled from the interior, and nearly all of them evacuated to Shanghai.

When the fall of Shanghai became imminent, landing forces of sailors and marines landed from all foreign naval vessels in the port and British soldiers reënforced the seagoing units. A cordon was formed about the International Settlement and the French Concession, barbed wire barricades were erected, and in the end several thousand sailors, marines, and soldiers were available for the defense of the place. No armed Chinese troops were permitted to enter this area, and in spite of the exasperation of the Cantonese at being balked of this rich prize no serious trouble has so far arisen at this port due to the precautions so opportunely taken.

With the coming of high water in the late spring of 1927 and the consequent arrival of large war vessels at Hankow and other ports, anti-foreign outrages temporarily ceased, although labor difficulties continued, subtle anti-foreign propaganda was kept in circulation, and it became more and more impossible to carry on foreign business.

For a long period of time progress to the north of the Yangtze was denied to the Nationalists. As a result, the battle line for months was along or near the Yangtze.

However, in the early part of June they began a steady advance to the northward, and the battle front receded from the River.

To the reader who is not cognizant of the trend of Oriental affairs, the above account of political and military operations of the Chinese may appear involved, unnecessary, and boring, and the connection with the operations of American men-of-war may not be apparent. This lengthy prelude is, however, required in order that the various clashes and engagements between our units and Chinese military forces may be understood with clarity.

Engagements Between American Men-of-War and Chinese Troops

Coincident with the arrival of Cantonese troops upon the banks of the Yangtze, firing by soldiers on foreign merchantmen and war vessels began. This continued with little interruption up to the present. Firing upon foreign vessels was at first confined to the Nationalist troops alone. Ultimately it was taken up and carried on by the Northern troops at various points along the River. At times during the year the Nationalists mined the harbor of Chenglin (123 miles above Hankow at the entrance to Tungting Lake). However, these mines proved ineffective.

American interests along the Yangtze and its navigable tributaries are normally looked out for by the Yangtze Patrol. This force consists of the *Isabel* (flagship) and six gunboats, the *Pigeon, Penguin, Palos, Monocacy, Elcano,* and *Villalobos.* As soon as the disturbances occasioned by the arrival of the Cantonese from the southward began along the Yangtze, it became necessary to supplement the regular vessels of the patrol with men-of-war belonging to other units of the Fleet. The vessels temporarily added to the force were destroyers detailed for this duty and one light cruiser, the *Cincinnati.*

From time to time after the arrival of the Cantonese on the Yangtze, it was necessary to convoy merchantmen past certain points. However, convoying did not become a general practice until after the Nanking outrage. From that period on it was necessary to convoy all American and British merchantmen between Vine Point (sixty miles above Woosung) and Nanking. After the battle front moved away from the River in the early part of June, convoy below Hankow ceased.

In June, when it became apparent that the reoccupation of Szechwan and Ichang by foreign interests was out of the question, the patrol supplied convoy to American merchantmen proceeding to Ichang for the purpose of evacuating movable American property from this port.

As has been previously stated, firing upon foreign men-of-war and merchantmen began coincident with the arrival of the Cantonese upon the Yangtze. In this respect the strict policy of American men-of-war operating on the River has been since the inception of the trouble never to fire upon troops until first fired upon, and to return such fire only when the source can definitely be located.

The following list briefly outlines the important engagements during the ten months covered by this article. There are not recorded either attacks on merchantmen or many minor attacks on our war vessels by stray soldiers or casual groups of snipers.

1. On September 3, the *Elcano* was fired upon heavily with rifle fire while passing a point ten miles below Hankow. Due to the fact that the source could not be located, fire was not returned. The ship was hit, but there were no casualties.

2. At a point about fifty miles below Hankow, on September 5, at 3:00 A.M., the *Stewart* was heavily fired upon with rifle fire from unseen posts on the bank. The ship was struck several times, and two sailors received surface wounds. Since it was impossible to discover the source of the attack, no return of fire was made.

3. The *Pope,* proceeding about 800 yards astern of the *Stewart,* was fired upon at the same time and place and was struck several times. There were no casualties. For the reason given above, no return of fire was made.

4. On September 6, a shell fired from the Wuchang side of the River at Hankow at Wu Pei Fu's yacht exploded about twenty yards from the *Pope,* but did no damage. During this day the *Pope* was struck by many bullets. There were no casualties, and fire was not returned.

5. The *Stewart,* on the same day and anchored near the *Pope* off Hankow, was hit many times, received no casualties, and did not return the fire.

6. The *Elcano*. Same as *Stewart* above.

7. On September 10 the *Palos* sailed upriver from Hankow in company with the *Pigeon* and *Stewart* and a convoy of one American merchantman and one British vessel. The *Palos* received an extremely heavy rifle and machine gun fire from Cantonese soldiers at Hanyang. She replied with rifles and machine guns. She was hit over thirty-five times. There were no naval casualties, and the ship proceeded on her mission.

8. The *Pigeon* was in the same convoy as the *Palos* and under the same fire. She was hit forty times. She replied with rifles and machine guns. There were no naval casualties, and the ship proceeded on her mission.

9. The *Stewart*, detailed to assist the convoy past Hanyang and then return to Hankow, was heavily fired upon by rifles and machine guns from Hanyang and returned the fire with rifles and machine guns. Failing to silence the firing from the bank, the *Stewart* fired one four-inch shell which struck a building on shore containing firing troops and exploded. The engagement abruptly terminated. There were no naval casualties.

Up above Hanyang the convoy found anchored the British merchantman *Kiangwo* containing the British naval wounded from Wanhsien. The vessel had thrice been turned back by a terrific fire from Hanyang. The *Stewart* took the wounded on board and delivered them safely to the British naval authorities at Hankow. Not a shot was fired during her return voyage past Hanyang.

10. On September 14, the *Pigeon* passed Chenglin and was fired upon with machine guns and field pieces from two emplacements on the bluff. The fire was returned with rifles and machine guns, firing 250 rounds. The *Pigeon* was unfortunately headed downstream, and when the field pieces opened up her main battery would not bear. Consequently, fire could not be returned with her three-inch guns. The shore batteries continued to fire upon the *Pigeon* until she was out of range, but although the shots fell alternately short and over the ship was not hit. Fifteen rounds were fired at the *Pigeon* by the battery. The ship was hit thirty times by rifle bullets. There were no naval casualties.

11. On September 19, the *Pigeon*, while steaming downriver past Hanyang, was very heavily fired upon by rifle fire and machine guns from both Hanyang and Wuchang (both sides of the River). The ship returned the fire with rifles and machine guns, firing 2,300 rounds. The main battery was not fired as no field pieces were fired from the banks and no distinct point of aim offered itself. The *Pigeon* was hit over 100 times and had three sailors wounded. Chinese casualties unknown.

12. On October 1, the *Ford* was fired upon from Wuchang while bound upriver. The firing was not heavy, source could not be located, and hence no return was made. There were no casualties.

13. On November 6, the *Isabel* while passing a point forty miles above Kiukiang was struck by rifle bullets during a battle between Chinese opposing armies on opposite banks. The fire was not returned, as it was presumed that the fire was not directed at the *Isabel*. There were no casualties.

14. On March 12, the *Preble*, en route upriver, was under rifle fire from Cantonese soldiers from thirteen to ten miles below Wuhu, three bullets striking the bridge and others hitting the hull. Fire was returned and silenced with machine guns. There were no naval casualties.

15. On March 24, the *Noa*, in conjunction with other war vessels, laid a barrage about Standard Oil Hill at Nanking in order to save the lives of the foreigners on this hill. This affair is covered in detail later in this article. On March 24, 25, and 26, constant sniping was directed at the *Noa* from the Bund at Nanking. On March 24, the *Noa* kept up constant machine gun fire on the Bund in order to protect the men at her main battery. There were no naval casualties.

16. The *William B. Preston*—Same time, place, and conditions as *Noa* above.

17. The *Preston*, loaded with refugees, on March 27, was fired upon heavily by machine guns in the vicinity of Silver Island (a fortified island near Chinkiang). This was returned by machine guns. The fort on the bluff opposite Silver Island then at pointblank range fired three shells at the *Preston*, one of which passed through the edge of the firecontrol platform. The *Preston* replied with four-inch and silenced the

gun. There were no casualties amongst naval personnel or the refugees on board.

18. The *Preston* on March 27, was fired upon near Kiangyin Forts with rifles and machine guns and returned and silenced the fire with machine guns. There were no casualties in the *Preston*.

19. On March 27, the *Stewart* was fired upon by rifles and machine guns near Vine Point. She replied with rifles and machine guns and finally with main battery and silenced the fire. There were no naval casualties.

20. On March 28, the *Ford* was fired upon in the vicinity of Kiangyin Forts with rifles and machine guns and returned and silenced this fire with machine guns and four-inch. There were no naval casualties.

21. On April 13, Northern troops at Pukow (opposite Nanking) fired upon the *Noa* with rifles. The *Noa* silenced them with machine guns. There were no naval casualties.

22. On April 15, Northern troops at Pukow entrenched abreast the *Ford* fired heavily upon a nearby American merchantman. The *Ford* returned this fire with machine guns, H.M.S. *Emerald* assisting. The troops then fired very heavily upon the *Ford*, which vessel then silenced this fire with four-inch shrapnel. The ship was hit in many places, but there were no casualties or material damage. Chinese casualties unknown.

23. On April 16, the *Preble* approaching Nanking was heavily fired upon with rifles from behind a mud bank on the shore at Pukow. The *Preble* silenced this fire with twelve rounds from her main battery. The ship was hit several times, but there were no naval casualties.

24. On April 16, while passing the Mud Forts below Nanking, the *Cincinnati* was fired upon heavily with rifle fire, machine guns, and three-inch field pieces. The *Cincinnati* replied with eleven six-inch and seven three-inch shells. There were no naval casualties.

25. On April 17, while passing the Tatung Pagoda, the *Cincinnati* was fired upon by rifle fire and machine guns for a distance of a mile along the shore. The fire was returned by rifles, machine guns, and three-inch anti-aircraft. There were no casualties in the *Cincinnati*.

26. On April 17, the *Ford* was fired upon with rifles by irresponsible soldiers at Nanking. The fire could not be located and was therefore not returned. There were no casualties.

27. On April 19, the *Preble* was fired upon from near Kiangyin Forts by Chinese soldiers with rifles from a dozen different places covering a frontage of two miles. The *Preble* replied with machine guns, but since this did not stop the firing, the main battery was employed and twenty-two shells fired. The vessel was hit many times, and one sailor was wounded. There were no other naval casualties.

28. On April 25, the *Penguin*, after being persistently fired upon by rifles and machine guns at a point eight miles below Kiangyin Forts, returned this fire with machine guns. She was then fired upon by field pieces, which fire she returned with her main battery. The *Penguin* was hit many times, and five sailors were wounded, one suffering a clean hole through the chest. Chinese casualties unknown.

29. On April 27, the *Sicard*, convoying eight miles below Silver Island, was fired at repeatedly with rifles by soldiers on shore. The fire was returned and silenced with rifles and machine guns. The ship was hit, but there were no naval casualties.

30. On May 2, while the *McCormick* was approaching Silver Island Pass, a gun on the bluff fired a shell at the destroyer, missing her by fifteen yards. The *McCormick* answered this fire with rifles and machine guns, but not with her main battery due to the presence of other shipping. Shortly afterward, two more shells landed in the vicinity of the ship, evidently fired from an unseen point to the eastward of the Mud Fort. This gun could not be located and therefore was not fired upon. The *McCormick* was not hit, and there were no naval casualties.

31. On May 8, the *McCormick* was fired upon with rifles from the north bank at Silver Island Pass. Fire was silenced by the use of machine guns. The vessel was not hit, and there were no naval casualties.

32. On May 10, the *Paul Jones* was fired upon by rifles opposite the Mud Forts below Nanking and returned and silenced the fire with machine guns and one shot from the main battery. The ship was not hit, and there were no naval casualties.

33. On May 12, the *Edsall*, while passing Nanking, was fired upon by rifles. The fire was silenced with rifles and machine guns. The ship was hit four times, but there were no naval casualties.

34. On May 13, at 5:00 A.M., while passing Nanking, the *Pillsbury* was fired upon with rifle fire from soldiers on both banks of the River. Fire was returned with rifles and machine guns. The ship was hit three times, but there were no naval casualties.

35. On the same day at 3:00 P.M., while convoying an American merchantman past Nanking, the *Pillsbury* was again fired upon by soldiers on both banks of the River. Fire was returned with machine guns. The ship was hit several times, but there were no naval casualties.

36. On May 20, the *Preble* was fired upon by machine guns and shrapnel from a point ten miles below Silver Island. This fire was silenced with nine main battery shells. The ship was not hit, and there were no naval casualties.

37. On May 27, while the *Pigeon* was passing Chenglin, Chinese troops on shore opened fire with machine guns and shrapnel, firing twelve rounds with field pieces. The *Pigeon* replied with machine guns and fourteen rounds of three-inch shrapnel. The ship was hit twenty times by machine gun fire, but there were no naval casualties. Chinese casualties unknown.

The writer, at the risk of fatiguing his readers, has taken pains to state in each of the above cases the facts as meticulously and with as much exact detail as is possible. So diverse and confused accounts have been published regarding many of these engagements and so vague are the impressions obtained by even the foreigners residing in China, that the necessity, once and for all, of stating exactly what occurred in each instance is apparent.

The present day Chinese soldier is distinctly a different creature from the gentry of even five or six years ago, who, armed with rifles of Civil War vintage, were more dangerous to friend than enemy. The modern Chinese soldier is ordinarily armed with reasonably modern guns and artillery. The Whampoa Academy (Cantonese) steadily turns out groups of youngsters to whom neither gunfire nor warfare is a mystery. There is an excellent chance that a Chinese trooper who aims at a ship will hit it. There are, of course, thousands of youngsters under the age of sixteen serving as soldiers who are about as intelligent and responsible as might be expected. They frequently shoot at passing vessels in exactly the same spirit as any lad with a popgun who cannot resist letting go at an itinerant sparrow.

However, contemplation of the attacks upon our merchantmen and men-of-war since September leads one inevitably to the following conclusions:

(a) That in a large majority of cases these attacks are deliberately planned and executed;

(b) That they are carried out with the full knowledge and approval of the high command;

(c) That the attacks on the part of soldiers under Cantonese command were made at the instigation of the Nationalist government and certainly with its connivance;

(d) That a large majority of these attacks were made with a full understanding as to the nationality of the vessel under fire. (Our merchantmen and war vessels fly additional large ensigns at the masthead while underway in the Yangtze);

(e) That the objects of these attacks are to inflict punishment upon the foreigner and to drive foreign shipping and war vessels from the Yangtze.

From a review of the various engagements it is surprising that we have not had many killed and wounded. The fact that our casualties have been so slight is due to those dual qualifications so essential to the conduct of successful enterprises—good management and good luck. At the beginning of these affairs, none of the ships on the River were fitted with proper means of defense against rifle fire. However, sand bags were promptly obtained and placed at salient points in the vessels. Odds and ends of boiler plating were obtained and used around bridges and main battery guns. Some ships removed the floor plating from the firerooms and utilized it about the weather decks. However, various ingenious defenses have now been constructed in most of the vessels regularly operating on the Yangtze. Gun shields have been manufactured from boiler plate and installed, bridges have been enclosed with steel plating, and machine gun nests have been constructed.

Sand bags are still employed by vessels reporting for temporary duty. Merchantmen, in addition to protecting their vital parts with plating and sand bags, have their lower decks surrounded with effective barbed wire barricades to prevent boarding by soldiers or bandits.

Landing Forces

Since September it has several times been necessary to land armed forces for the preservation of American lives and property, sometimes independently, but frequently in coöperation with other nationalities.

On September 3 Hankow fell into a complete panic due to the advance of the Cantonese upon the Han cities. Thousands of Chinese stormed into the concessions with their possessions. The streets were choked. The situation was completely out of hand. The Chinese authorities requested our assistance in preserving law and order, and we landed full landing forces from all American vessels in port and occupied the ex-Russian Concession, coöperating with the British, French, and Japanese naval landing forces. This force operated on shore until September 16, when conditions quieted and the sailors were withdrawn to their ships.

From November 5 to 7 American sailors were landed at Kiukiang to protect American lives and property during the fall of that city to the Cantonese.

On December 17 the *Elcano* landed a force at Ichang to protect our nationals during a clash between Chinese armies.

During the afternoon of January 3 a furious riot occurred along the boundaries of the British Concession at Hankow. The situation got out of control of the British local police and naval landing force and that night an American naval party was landed in the British Concession to protect the lives of our nationals during their evacuation. This party was withdrawn later during that night after all Americans had been successfully evacuated from the Concession.

On March 24, after the *Noa*, the *Preston*, and H.M.S. *Emerald* had jointly shelled the vicinity of Standard Oil Hill at Nanking, a combined American and British landing force was sent ashore to rescue the evacuees from this hill. The mission was accomplished without casualties.

On March 21, due to the advance of the Cantonese, it became necessary to land an international landing force at Shanghai to preserve the integrity of the International Settlement and the French Concession. American sailors and marines were landed, and at present writing our marines are still on shore at this port.

One has to face a Chinese mob but once to realize its terrible possibilities. Ever afterward one will retain a most wholesome respect for its danger. The Nationalist government has proved itself expert in arousing large masses of ignorant coolies to high degrees of frenzy. Like wolves the pack closes about the unfortunate foreigner who has offended. Shouting, screaming, howling, no man's life is safe before the insensate rage displayed by these wretched coolies. And always in the background today may be seen hovering like a vulture the paid agitator, hired to produce exactly the result one perceives before his eyes. A mob springs up like magic these days. The most dreaded sound in China at the present is the noise of running feet.

We speedily found our landing forces ill equipped to withstand Chinese mobs. The need of steel helmets to withstand blows of sticks and showers of bricks and stones became imperative, and the landing forces of all ships regularly attached to the River are now fitted with this vital headgear. The Yangtze sailor these days who goes ashore with the landing force is fitted out for business with his rifle, bayonet, pack, gasmask, and steel helmet.

The landing forces of our regular river gunboats are particularly well supplied with riot guns and machine guns. Riot guns are most effective against mobs, and machine guns can if necessary always be brought into play as a last resort to control any situation which may develop.

It speaks volumes for the splendid self-control of our officers and men that only rarely during the past few troubled months has it been necessary actually to use the weapons brought ashore. Obviously force must be employed only as a last resort, for every effort must be made to reduce to a minimum the number of our clashes with the Chinese.

Armed Guards

It has been necessary upon many occasions since September to send armed parties

into merchantmen either for the purpose of protecting them en route from port to port or to preserve law and order while they were at anchor.

During the voyage of a fleet of three Standard Oil motor vessels from Hankow to Ichang, a severe engagement occurred on December 12 near Shasi between the naval armed guards in these vessels and soldiers on the banks of the River. The armed guards finally silenced the fire with machine guns. There were no naval casualties.

At Chungking the *Monocacy* from time to time had to send armed guards to clear armed and unarmed soldiers from American merchantmen. On April 2 the *Monocacy* sent an armed guard to clear the American vessel *Chi Nan* of unauthorized cargo which had been put on board the ship in such quantities as to endanger its safety. Sampans endeavored to rush the ship, and the armed guard perforce fired upon them and wounded three Chinese, one fatally.

Crews for Merchantmen

After the Cantonese obtained control of the labor situation, strikes developed with frequency in American shipping. From time to time entire crews struck and deserted their vessels, and as a measure of safety temporary crews were supplied from naval vessels.

Rescue of Chinese Troops from Burning Transport

On October 21, the Chinese transport *Kiang Yung* suddenly caught fire at Kiukiang while loaded down with troops. In spite of the danger from exploding ammunition, the *Pigeon* and the *Ford* saved with their boats over 100 soldiers from certain death by burning or drowning.

Saving Installation After Being Struck by Shell

On May 22, at 3:00 A.M., a four-inch shell passed over the *Ford*, at anchor in the harbor of Chinkiang, and struck a large tank in the very center of the Standard Oil Installation. This tank was full of kerosene. It exploded and burst into flames. The *Ford* promptly landed her landing force, as did H.M.S. *Witherington*, and by dint of brave, persistent, and determined work the fire was ultimately extinguished, this most distinctly at the risk of the lives of the officers and men engaged in the attempt.

The Loss of the British Concession at Hankow

The most serious event which has happened along the Yangtze during many years was the furious attack upon the British Concession at Hankow on January 3, 4, and 5, and the consequent fall of this Concession and the British Concession at Kiukiang to the Chinese. The British naval landing forces and the Volunteer Corps (civilians) who during this vicious, persistent attack hour after hour withstood the mobs without firing upon them provide an example of wonderful self-control. With the final withdrawal to the ships of sailors and all foreign civilians, the mobs ran riot through the Concession.

The incident was important and far reaching, for it broke the back of foreign prestige in China. From that day the retrogression of the foreigner's rights and prestige, of respect for his interests, of appreciation of his welfare began and has steadily continued. Life is not pleasant for foreigners these days along the Yangtze.

The Nanking Outrage

An affair which seemed to us who knew its details certainly a *casus belli* of the most pronounced order was the Nanking outrage on March 24. The naval side of this extraordinary happening is interesting to a degree.

In the latter part of March the Nationalist troops operating under the direction of the Hankow government surrounded and captured Nanking. The various consuls, prior to that time, had warned their nationals that trouble would probably occur when Nanking fell to the Southerners and had recommended the withdrawal to Shanghai of all foreigners who could possibly leave and particularly that all foreign women and children depart from the port. Some 100 American women and children left, but the large majority remained, believing in spite of overwhelming evidence as to the anti-foreignism of the Nationalist government, that they would be unmolested during the capture of the city.

Our defense plan for Nanking called for the assembling on Standard Oil Hill of all Americans should a sudden emergency arise. On this hill are the residences of the Standard Oil officials and other foreign houses. The hill surmounts the city wall by some

forty feet, and to reach the wall it is only necessary to descend the steep slope from the houses to the broad top of the ancient stone structure. At this point the wall is sixty feet high above the exterior surrounding terrain. These houses are about a mile from the bank of the Yangtze and in plain view of ships anchored in the usual men-of-war berths.

The Consulate is within the city walls and is about a mile and a half from Standard Oil Hill. The hill and the Consulate are separated by broken, hilly country with few dwellings. The roof of the Consulate is visible from Standard Oil Hill.

On March 23 the Nationalist troops entered the walled city, and trouble immediately began for foreigners. Alarmed at the eleventh hour, many of the foreigners went on board their war vessels. Men-of-war in the harbor on that day consisted of the American destroyers *Noa* and *William B. Preston*, the British light cruiser *Emerald*, and three Japanese destroyers. By nightfall the *Noa* and the *Preston* were loaded down with refugees—104 women and sixty-nine children—all who would obey the Consul's injunction to evacuate. There were left within the walls of Nanking these remaining Americans—sixty-eight men, forty-nine women, and nineteen children.

During the evening of March 22, eleven men were landed from the *Noa* under the command of Ensign Woodward Phelps and brought to the American Consulate. Owing to the inadvisability of being observed by the military with arms, five automatics only, concealed under coats, were taken along from the ship. These were sufficient, for the Consulate was well equipped with rifles and ammunition. The Consul, Mr. John K. Davis, had provided three automobiles for the party. In these the guard was successful in getting through the Middle Gate and into the city. Fifty armed British marines were observed halted at this gate as the American party passed. It was later learned that after a wait of several hours in a vain attempt to obtain permission to enter the city and reach their consulate, they had to return to the *Emerald* with their object unaccomplished.

A signalman was included in Ensign Phelps' party, and another was sent to the residence of Mr. Hobart, the manager of the Standard Oil Company, in order that communication might be ensured between the Consulate and the destroyers in the event that telephone service should be interrupted or the city gates be closed.

On the twenty-third a small guard of six men from the *Preston* was placed at the Standard Oil residences, and the number of signalmen there was increased to two. These preparations later served to save the lives of the greater part of the foreign population of Nanking including the Japanese.

After the failure of the British to obtain the entrance of their armed marines, they managed to smuggle in some eighteen as orderlies. These marines assumed duty as guard for their Consulate.

During the forenoon of the twenty-third, although there still appeared no real apprehension as to danger to the Consulate, Ensign Phelps signalled for a Lewis gun in addition to more provisions. This was successfully smuggled into the Consulate.

During the afternoon of the twenty-third a constant stream of defeated but, in general, orderly Northern soldiers straggled through Nanking towards the Yangtze. Disorders broke out on the bank of the River about six o'clock that evening owing to lack of facilities for transporting the defeated troops across to Pukow, and there was considerable firing. Later, some 10,000 troops were forced to return into the city, disorders took place, and there was looting and indiscriminate firing all along the roads.

In the vicinity of the Consulate, this firing was more or less continuous though never large in volume. Ensign Phelps armed his guard with rifles and fixed bayonets and stationed watches about the compound with instructions to keep all unauthorized persons out. If shot at, the orders were to shoot first in the air and next to kill. All places of access to the compound except the front gate were well barricaded. At this gate boxes of earth were arranged to protect the sentries should they be fired upon from the road.

At 8:00 P.M., a Northern Chinese officer was wounded and robbed by his own troops at the back gate, which he was endeavoring to enter. He later died here. Since this indicated that the retreating soldiers were getting out of hand and robbing as they fled, the watch was doubled, with the result that a practically continuous watch was stood during the night, the men obtaining but a

few minutes' rest each hour. During the night Chinese tried upon three separate occasions to break into the compound, but they were frightened off by the guard. Early in the morning three Chinese were executed by soldiers just outside the front gate.

During the early morning it was reported that the Nationalist troops had entered the city by the two south gates and were busy rounding up such of their defeated enemies as remained within the walls.

At about 8:00 A.M., the first Nationalist troops to be sighted passed the Consular gate, but they were so occupied in searching for Northern troops that they ignored the Consulate.

Shortly afterwards more arrived. The Consul was at the gate. The soldiers cursed him savagely. The Consul (he speaks Chinese fluently) told them who he was, and that Americans had no hostility to the Nationalists. A petty officer, his face twisted with violent hate, pointed his pistol at Mr. Davis and shouted: "You are all alike! The British and Italians are killing our men in Shanghai, and you Americans have drunk our blood for years and become rich. We are busy now killing Northern soldiers, but we will soon begin killing all foreigners in Nanking regardless of from what country they are."

These troops went on their way, but soon reports of outrages began to pour in by the telephone, which, curiously enough, continued to function.

The first report was from the American Church Mission, which had been entered by Nationalist troops who were stealing property. Then the president of Nanking University telephoned that Nationalist soldiers in uniform had robbed a group of Americans in the University and had with no provocation wantonly shot through the head and killed Dr. J. E. Williams, the vice-president of the institution.

Loyal Chinese rushed in and reported that the Japanese Consulate had been looted and the Consul killed and that crowds of soldiers on the street said that they were also attacking the British Consulate General.

Desperately, Mr. Davis made every effort, both directly and by telephone, to have the police put him in touch with some high Nationalist official in order that he could make an appeal for the protection of Americans and of all foreigners. This endeavor and many others subsequently made proved entirely futile.

Seven Americans from a nearby mission then rushed into the Consulate for refuge, stating that they had barely escaped with their lives from Nationalist soldiers who were endeavoring to kill them. These refugees brought the total number of Americans in the Consulate up to twenty-four, including Mrs. Davis and the two children.

Reports came in from the Chinese that the British Consulate was being attacked and that the Consul General and some other British had been killed. Attempts to telephone this Consulate resulted in no reply.

Mr. Davis then telephoned Mr. Hobart, the Standard Oil manager, at his house on the Hill, which is not far from the British Consulate, and he confirmed the attack, stated that two officers from H.M.S. *Emerald* as well as a number of other British had just come up to his house for refuge, and advised the consul to evacuate the Consulate and to endeavor to make his way with his party through the open country to Standard Oil Hill.

At this point, the chief of the local police station came in, evidently badly alarmed, and urged the party to leave at once, stating that all would be killed if they remained. After a hurried consultation, it was decided to abandon the Consulate immediately.

The guard was armed with rifles and revolvers. Packs, blankets, and superfluous equipment were left behind. The machine gun parts were distributed among the missionaries, who promised to carry them. All preparations were made with a view toward expediting the passage of the party across the mile and a half of open, hilly country which they had to traverse.

At about 11:00 A.M. the party set forth from the rear gate of the Consulate—the civilians carrying a large American flag on a bamboo pole, Mrs. Davis and her children in the middle of the column, the armed guard covering the rear. A Chinese policeman accompanied the procession, and a faithful servant carried two suitcases for Mrs. Davis.

The party had gone only 100 yards when rifles were fired at it from a distance of several hundred yards, and from this moment until Standard Oil Hill was reached the procession was under constant fire. The

policeman promptly deserted, but the servant trudged along until he was shot down.

At one point the fire became especially hot and came from a very short distance away, but the party ran through a dense bamboo grove and thus saved their lives, for they were not pursued by this particular group of miscreants. Only the unbelievably poor marksmanship of the Nationalist soldiers prevented the desperate group from being wiped out.

At the request of the consul, Ensign Phelps ordered his men not to shoot except as a last resort, for it was plainly apparent that resistance could but result in a furious attack upon the party from all directions.

The going was hard, particularly upon Mrs. Davis and the children, who bore up well. The missionaries became frightened and threw away some parts of the machine gun, probably considering that they hindered their progress. One of the missionaries lost six full pans of ammunition he had been detailed to carry.

They were three-quarters of the way to the Hill when Plumley, a sailor of the guard, was wounded in the back by a bullet and knocked down. Then the guard opened up on its pursuers, killing or wounding two. This frightened the remainder, who in the meantime had killed the servant of Mrs. Davis and had stolen the suitcases.

The party finally reached the house of Mr. Hobart, to which other foreigners had fled. In addition to Mr. and Mrs. Hobart, there were several American civilians, two officers from H.M.S. *Emerald*, five British civilians, two Scandinavians, two Russians, two signalmen from the destroyers, and the guard of six sailors from the *Preston*. This brought the total up to forty-seven men, two women, and two children.

The Consulate party arrived at Mr. Hobart's house at 11:30 A.M. A short period of quiet ensued, and the Consul telephoned his Chinese staff at the Consulate. But five minutes after the Consulate had been evacuated, some forty Nationalist soldiers had broken in and looted the entire place, firing at the staff and servants but fortunately killing no one. After obtaining this information Mr. Davis resumed his efforts by telephone to get in touch with some responsible official and plead for protection for foreigners. He was entirely unsuccessful.

About 12:15 P.M. groups of soldiers began arriving at Mr. Hobart's house. With a few brief intervals between bands, there were soldiers at the door from that time on to the end.

All arms were stowed on the second floor, and all sailors except the signalmen were kept out of sight.

By one o'clock the surrounding houses on the hill were being looted by soldiers and more and more of these rascals appeared in view.

Coming to the house they were met at the door by Mr. Davis and Mr. Hobart, whose lives were in continual jeopardy. These soldiers were all ugly and hostile. They covered Mr. Davis and Mr. Hobart with loaded and cocked pistols, and most of the time held these at the breasts of the brave gentlemen. By doling out to each successive band a portion of the entire amount of money and valuables the unfortunate refugees were able to collect amongst themselves, the robbers were induced successively to leave.

In the meantime efforts were continued by telephone to gain touch with some responsible official, and for a time hope was entertained that some one would appear on the scene and restore law and order.

It was obvious that the armed guard could be resorted to only as a final measure, for their firing would undoubtedly fetch the whole gang of marauders about the ears of the company.

Finally, a group of six soldiers arrived, and their attitude was such as to render the situation hopeless. It was apparent that they intended to force their way into the house and equally apparent that their aim was the murder of the foreigners within it. The guard prepared for action, and Mr. Davis and Ensign Phelps hastily decided that the best chance of saving the lives of the party lay in our men seizing these six soldiers and tieing up and gagging them. Just as the murderous ruffians forced the door, pushing Mr. Hobart, Mr. Davis, and Mr. Paxton (the vice consul) back with cocked pistols held against them, the bluejackets rushed down the stairway. The soldiers threw down their bandoliers and got away before they could be seized. At the Consul's urgent request, the guard continued to withhold its fire, although they could readily have killed all six of these assailants at this time.

As soon as these miscreants could take cover they commenced a steady sniping fire

at the house from behind graves and outbuildings. Reënforcements were promptly and rapidly brought up, and the fire became incessant. The women and children lay down on the floor of a bathroom which was better protected than the other rooms, while the men took such cover as possible against the bullets which came crashing through windows and doors.

As soon as it was evident that the attack was in earnest, messages were sent by semaphore to the *Noa* and the *Emerald* asking that a landing force be sent to the foot of the city wall below the house. The gallant signalmen sent these without flinching, though they presented excellent targets for the bullets which kept hitting all about them.

At the request of the Consul, Ensign Phelps at first ordered his men only to fire warning shots over the heads of the assailants, but it speedily became evident that the house would be rushed by overwhelming numbers unless drastic action were taken, and the order was given to shoot to kill. The fire from the guard was unquestionably effective.

However, it grew obvious that even this step would prove ineffective, for the numbers and rage of the soldiers were rapidly increasing. Signals were finally made to the anxiously waiting *Noa, Preston,* and *Emerald* asking for a barrage. The reluctance of the consul to have this signal made was of course due to his fears as to the effect of such firing upon the safety of the Americans and other foreigners scattered in various parts of the city. The signal should have been made long before, although at the time it seemed best to exhaust all possible efforts at a comparatively peaceful conclusion prior to resorting to the last extremity.

The behavior of the signalmen from the *Noa* and *Preston,* who continued to send messages with bullets whining past them and chipping bits of stone from the veranda balustrade at their side was an inspiring demonstration of cool efficiency and bravery.

The request for a barrage was followed immediately upon its receipt by a two-gun salvo from the *Noa,* firing flat nose projectile. These landed exactly where needed, one on top of the hill to the left of the house and the other just over the hill. The *Preston* and the *Emerald* joined in, and an extraordinarily smart piece of work ensued. A curtain of shells was dropped with remarkable accuracy on both sides of and behind the Standard Oil house. The soldiers ran like scared rabbits, and the guard in the house speeded their departure with their rifles, killing three or four at this time. Since the only Chinese on the hillsides at the time of the barrage were Nationalist soldiers, any fatalities which were caused must have been among those actually looting and attacking.

The barrage lasted some fifteen minutes, and then signal was made that the way was clear and that the beleaguered party was about to abandon the house, make for the wall, and endeavor to win through to the ships. The *Noa* and *Preston* promptly ceased firing and sent away their landing forces to cover the retreat of the party. The *Emerald* sent away her landing force also but continued firing salvos at minute intervals over the house and around it in order to keep the area clear of Nationalist troops and to facilitate the evacuation.

While the shelling of the hill was going on and during the landing of the landing forces and their absence from the ships, it was necessary for both the *Noa* and the *Preston* to keep the Bund clear of snipers by returning a scattered but persistent fire with rifles and machine guns.

For a long period of time a stout rope had been kept in the basement of Mr. Hobart's house for exactly the emergency which now existed. When the barrage began, orders were given to bring up the rope and to prepare to evacuate over the wall. To the dismay of all hands the rope was reported missing. Later investigation proved that three missionaries had used it early that morning to get over the wall and had abandoned it after being sniped at. The snipers had promptly stolen it. However, lines were in a surprisingly short time improvised from bed sheets and electric wiring, and with sailors guarding the ridge to the rear the party descended to the top of the city wall, some 100 feet distant. There the evacuation over the sixty-foot wall proceeded apace.

Armed sailors were first lowered to the base of the wall to protect the others of the party from sniping by soldiers in the vicinity. Then came the women, the children, the wounded sailor, and the unarmed missionaries. The last to descend were the signalmen, who maintained communication with the ships to the end. The only serious mishap at this time occurred when one of the lines carried away and the gallant Mr. Hobart fell twenty feet and broke his leg.

The party still had about a mile of open country and one canal to cross before reaching the bank of the Yangtze. The combined American-British landing force failed to meet the refugees, for the naval force proceeded along a causeway close to the wall, while the evacuees selected a causeway further west and away from the wall. Slow firing was continued by the *Emerald* to cover the landing force. One six-inch shell struck the wall some forty yards ahead of the leading squad and a shower of fragments fell amongst the sailors. After a sweep of half a mile along the wall, satisfied that the refugees had escaped, the landing force returned to the ships. Although the landing party never met the refugees, its known presence ashore prevented further attack, and the worn-out evacuees made their way to the River without further molestation. Their progress was slow due to the necessity of carrying the wounded sailor and Mr. Hobart. Once on the bank of the river, they were sighted by H.M.S. *Wolsey,* which had just arrived. This destroyer steamed in close to the bank and quickly took the party on board. The perils of these unfortunate people were at an end.

The rest of the tale may be more briefly stated, although the resulting situation was a period of the gravest anxiety to the officials in charge.

A conference was immediately held in the *Emerald,* and the American and British naval commanders drew up a series of demands requiring: (1) the protection of all foreigners and their evacuation to the river shore under guard; (2) the issuance of strict orders for the protection of all foreign lives and property; and (3) that the commanding general come on board before eleven that night to arrange for the protection of foreigners. This note was sent to the general by an official of the local Red Swastika (Cross), who had come on board to mediate.

At the conclusion of this conference, Rear Admiral Hough, the Commander Yangtze Patrol, arrived in the *Isabel* and became senior officer present.

Negotiations proceeded during that night, the following forenoon, and the early afternoon. A message received during the night from Chiang Kai Shek, the Nationalist general commanding all Nationalist forces, requested that we delay drastic action until he should arrive. We received evasive and insolent replies to our demands. We were ready to adopt force only as a last resort, for it was feared that shelling the city would very probably result in the immediate murder of any foreigners remaining alive.

However, time was passing, and there were still left within the walls over one hundred Americans, dead or alive, some seventeen British subjects, and an unknown number of other foreigners. It would have been suicidal to attempt to enter the city with the landing forces available. The entire force would have been lost by the time the first of the great gates had been forced, even had it been possible to accomplish that much. It was decided with the British that if our imprisoned nationals were not released by the late afternoon the *Isabel, Noa, Preston, Emerald,* and *Wolsey* would jointly shell the salient military points of the city, including the gates and the military yamen, but sparing the civil populace as much as possible. This decision was sent by a Chinese orderly to the commanding general, and preparations were made. An adjutant from the general arrived, but he was unceremoniously bundled off the *Isabel* and obviously very much alarmed, returned ashore. He was informed that there would be no further talk. News came that practically all the remaining Americans were imprisoned in Nanking University.

About half past four, when all the naval commanders were gathered in the *Isabel* and a final conference was being completed, the tenseness of the situation suddenly lightened, and with equal suddenness the whole affair came abruptly to an end.

There appeared on the Bund the British consul general, who had been shot in the leg but not killed, the missing marines, and all remaining British civilians except two Indian sikhs. Almost at the same moment there appeared the advance guard of the Americans who had been imprisoned in the University.

By eight o'clock that evening all Americans were on board naval vessels excepting Dr. Williams, whose body was buried before the party left the University. Included in the party was Miss Moffat, who had wantonly been shot twice through the body by soldiers and who was in a very dangerous condition.

It developed that the Japanese consul had been ill in bed when his Consulate was attacked. Soldiers rushed into his bedroom and fired twice at him. He had the wit to

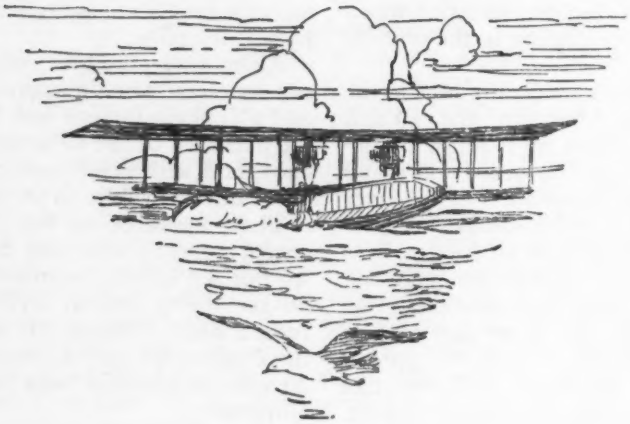
roll over and remain quiet, and the soldiers presumed him dead.

Little remains to be said about this affair. The lives of the Americans in Nanking were saved: first, by the barrage on the twenty-fourth which caused an immediate cessation of the killing and looting by Nationalist soldiers; and, second, by the threats which were made on the twenty-fourth and twenty-fifth by American and British naval authorities. These threats produced in the minds of the responsible officers the certain conviction that any further outrages would result in bombardment.

That the whole affair was originated, sponsored, and engineered by the Nationalist government is a certainty. Foreigners hiding from their assailants overheard ample, damning evidence, and there exists no doubt as to the truth of this charge.

The attacks were not the loose, vicious acts of irresponsible soldiers. Directly the barrage began, bugles and whistles blew all over the city, the looting soldiers fell in with celerity in the streets, officers appeared, and the troops marched away in good order and discipline.

The flag which remained flying over the Consulate after the place was evacuated was ultimately recovered. From the Chinese staff who were left at the Consulate, we learned that the Nationalist soldiers hauled it down, tore it to pieces, spat upon it, stamped upon it. It remains in the hands of the consul, mute evidence of the amazing act of a so-called friendly government.



Rodgers' Ruse

By Rear Admiral Elliot Snow *(CC), U. S. Navy, (Retired)*

THE British pendant sheet on the following page was taken from H.M.S. *Highflyer,* a schooner under the command of Lieutenant Hutchinson, first lieutenant of Admiral Warren's flagship, and was obtained by Commodore John Rodgers, under the following interesting circumstances.[1]

"The *Highflyer,* the admiral's tender, was dispatched to look out for the frigate *President,* then expected on the coast. In the event of falling in with her, or any other American warship, he was directed to proceed forthwith off New London and notify the blockading squadron there. After cruising off Nantucket Shoals a certain time without falling in with any American vessels he was to stretch away to the eastward, and cruise off the Isle of Shoals, where, if he fell in with them, he was, in like manner, to proceed to Boston Bay and give information to the ships on that station. Off Nantucket Shoals he fell in with the *President* (Commodore John Rodgers). On first seeing the *Highflyer,* the *President* chased;[2] but finding the *Highflyer* outsailed him, Commodore Rodgers made a signal, which was purposely so managed by displaying it only partially and moving it so as to prevent its being distinctly perceived, that it caused the *Highflyer* to lay to for the *President* to come up. On ranging alongside, the commander of the *Highflyer* was directed to come on board, which he did and remained in the cabin of the *President* for some time, answering questions without the least suspicion (as to the nationality of the vessel he had boarded in obedience to order)."

In the meantime, "an officer of the *President* was dispatched in a British uniform, to request of the officer remaining in command of the *Highflyer,* her signal book." The reason given for such an unusual request was "the purpose of making some alterations ostensibly lately established by the Admiralty in consequence of the capture of a British vessel, by which accident it was supposed the signals had fallen into the hands of the Americans. The officer demurred, at first, but on then being peremptorily *demanded,* gave them very willingly." Lieutenant Hutchinson, much to his astonishment, was then informed he was a prisoner on the *President.*

The pendant sheet thus acquired disclosed completely the precise number of English warships employed on our coast during the early period of the War of 1812. It shows clearly that "with the exception of a few ships, the whole force on the West India Station was drawn off to act against the United States." This force was greatly augmented in the year 1814. "Taking it as it appeared, however, in 1813, it appears that the British at that time assailed our coasts with *one hundred and seven* vessels of different rates."

(1) From the *Analectic Magazine and Naval Chronicle,* Vol. 6, July to January, 1815.

(2) Probably each was trying to deceive passing vessels by displaying false colors—Rodgers, English and Hutchinson, American.

Pendant Sheet for H. M. Ships on the North American and West India Station

St. Domingo	74	Marlbro'	74	Dragon	74	Poictiers	74	Victorious	74	Shannon	38	Nymphe	38	Junon	88	Statira	38	Acasta	40	Narcissus	32
Maidstone	36	Tribune	36	Belvidera	36	Tenedos	38	Ramillies	74	La Hogue	74	Cleopatra	32	Spartan	38	Crescent	38	Cyane	20	.	.
Garland	22	Fawn	20	Lightning	20	Tartarus	20	Valiant	74	Herald	20	Orpheus	36	Ruby	68	Laurustinus	24	Arachne	18	Diadem	64
Moselle	18	Atalanta	18	Rattler	16	Martin	18	Arethusa	38	Surinam	18	Sophie	18	Sapphire	18	Ringdove	18	Amaranthe	16	Sylphe	18
Minerva	32	Plantagenet	74	Sceptre	74	Surprise	38	Circe	32	Coquette	20	Hermes	20	Conflict	16	Argo	44	Crane	18	Nimrod	18
Arab	18	Dominique	—	.	.	Recruit	18	Grampus	50	Colibri	18	Mercury	28	Goree	18	Vestal	28	Demarara	18	Boxer	14
.	.	Sappho	18	Wanderer	20	Opossum	10	Barrosa	36	Spider	14	Peruvian	18	Charybdis	18	Morgiana	18	Diomede	50	Picton	10
Scorpion	18	Frolick	18	Pax	10	Cuttle	4	Canso	10	Bream	4	Swaggerer	16	Elizabeth	74	Nettley	14	M.Fortunee	14	Highflyer	7
Maria	14	Bold	14	Balahou	8	Decouverte	12	Success	32	Variable	12	Centurion	50	Emulous	16	N. Scotia	—	Childers	18	Herring	4
Curlew	16	Hope	10	LoupCervier	18	Mohawk	18	.	.	Fox	36	Romulus	36	Mariner	14	Barbadoes	28	Fantome	18	Bostock	—
.	.	Nemesis		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

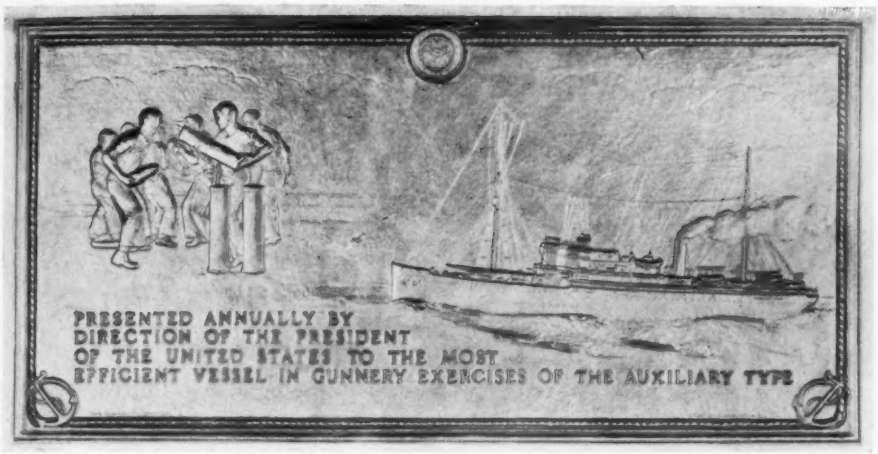
Mem. When the double pendants are used, they will be hoisted where best seen.

Given on board the *San Domingo* Bermuda, 13th March, 1813.

(Signed) H. HOTHAM, *Captain of the Fleet.*

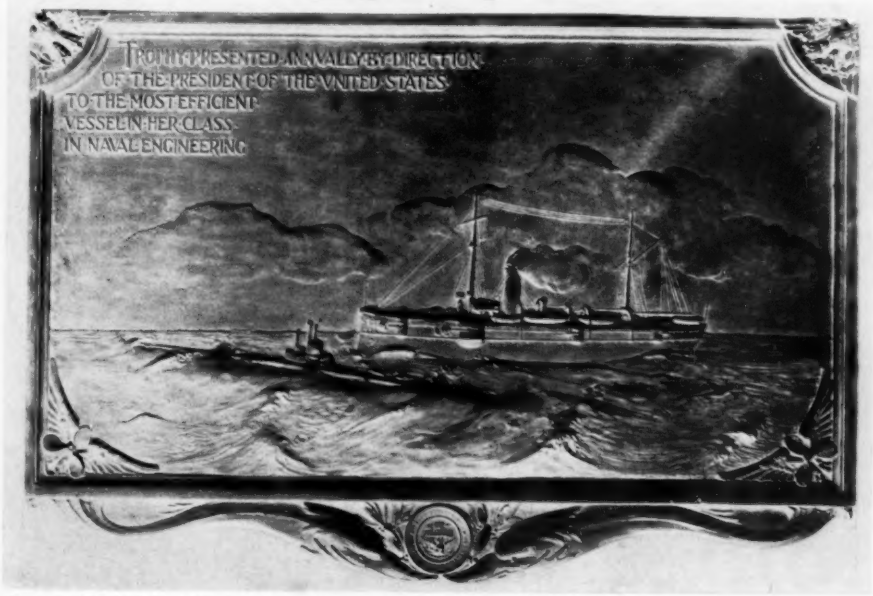
To Lieutenant GEORGE HUTCHINSON, *commanding his majesty's schooner "Highflyer"*.

Note. The number of vessels here exhibited is greater than the estimate made in the article on the navy, in our second number; but the *force* is nearly the same, there being a greater number of frigates and sloops, and fewer seventy-fours, than we there specified.


PRESENTED ANNUALLY BY
DIRECTION OF THE PRESIDENT
OF THE UNITED STATES TO THE MOST
EFFICIENT VESSEL IN GUNNERY EXERCISES OF THE AUXILIARY TYPE

AUXILIARY CLASS GUNNERY TROPHY

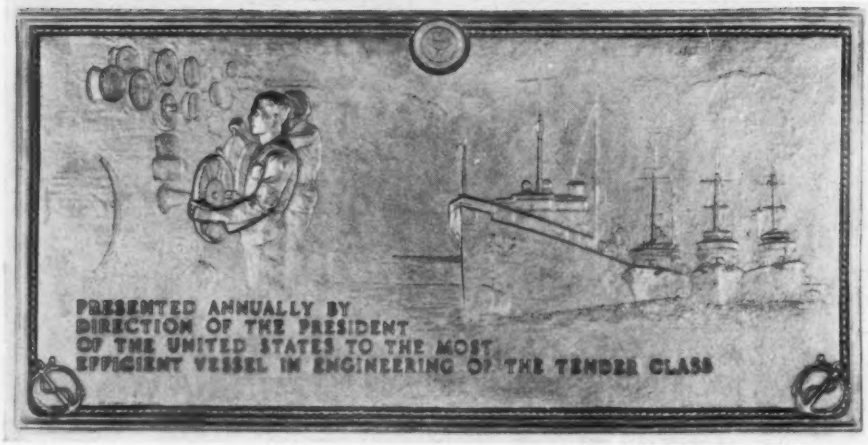
Presented each year by direction of the President of the United States to the vessel in the auxiliary class making the highest score in gunnery. Now held by U.S.S. *Dobbin*.


TROPHY PRESENTED ANNUALLY BY DIRECTION
OF THE PRESIDENT OF THE UNITED STATES
TO THE MOST EFFICIENT
VESSEL IN HER CLASS
IN NAVAL ENGINEERING

Courtesy of Office of Naval Operations, Navy Department

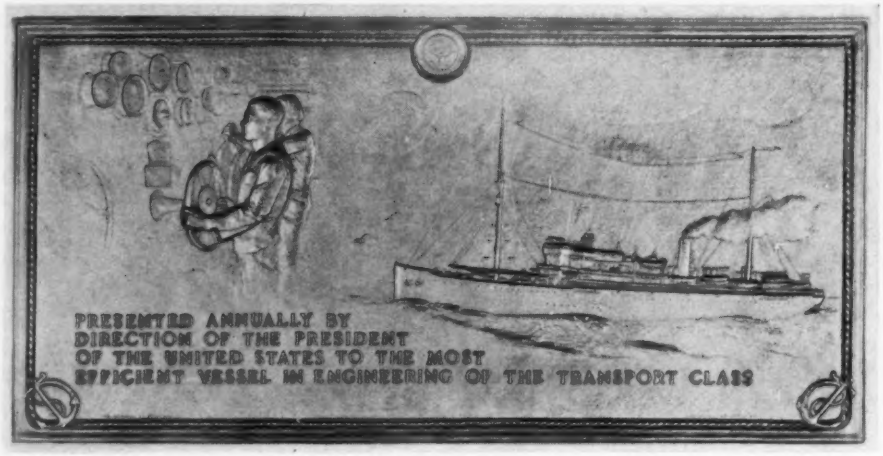
GUNBOAT ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the vessel of the gunboat class making the highest engineering score. Now held by U.S.S. *Eagle* 35.


PRESENTED ANNUALLY BY
DIRECTION OF THE PRESIDENT
OF THE UNITED STATES TO THE MOST
EFFICIENT VESSEL IN ENGINEERING OF THE TENDER CLASS

TENDER CLASS ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the vessel of the tender class making the highest score in engineering. Now held by U.S.S. *Black Hawk*.


PRESENTED ANNUALLY BY
DIRECTION OF THE PRESIDENT
OF THE UNITED STATES TO THE MOST
EFFICIENT VESSEL IN ENGINEERING OF THE TRANSPORT CLASS

Courtesy of Office of Naval Operations, Navy Department

TRANSPORT CLASS ENGINEERING TROPHY

Presented each year by direction of the President of the United States to the vessel of the transport class making the highest score in engineering. Now held by the U.S.S. *Kanawha*.

Courtesy of Office of Naval Operations, Navy Department

PATROL VESSELS GUNNERY TROPHY

Presented each year by direction of the President of the United States to the patrol vessel making the highest score in gunnery. Now held by the U.S.S. *Helena*.

Navy Department Official Photo

"COMMUNICATIONS"
The annual communications competition includes radio and visual signalling.

Navy Department Official Photo

THE IRON MAN

The prized athletic trophy signifying "General Excellence" in athletics. The picture shows Captain (now Rear Admiral) W. H. Standley receiving the trophy while commanding the U.S.S. *California* (the winning ship).

Courtesy of Navy Recruiting Bureau, New York

THE BATTENBERG CUP

The famous cup, presented by the officers and men of the Battenberg squadron which visited this, country in 1905. Raced for in Navy Standard Racing Cutters. British ships present are invited to enter these races and have, on occasions, won the race.

International Newsreel

THE BASEBALL TROPHY

This tropy was recently won by the U.S.S. *California*.

Courtesy of Captain F. H. Poteet, U. S. N.

THE AMOY CUP

Presented by the Imperial Chinese Government at Amoy, China, November 3, 1908, in commemoration of the visit of the American battleship fleet. The cup is of solid gold and valued at $5,000. (See Plate XLI)

Courtesy of Captain F. H. Poteet, U. S. N.

THE AMOY CUP

On account of its great value this cup has been kept at the Navy Department. On November 14, 1908, Emperor Kuang Hsu died and on the following day Dowager Empress Tsz'e-Hsi died. The sudden deaths of both the Emperor and Empress Dowager aroused considerable comment at the time.

Courtesy of Los Angeles Chamber of Commerce

FLEET AT SAN PEDRO (LOS ANGELES HARBOR) 1908

Since the arrival in 1908 a breakwater has been built at San Pedro which makes a fine protected anchorage. Additional improvements along this line are being made and will make this one of the finest anchorages on the coast.

will make this one of the finest anchorages on the coast.

Courtesy of Los Angeles Chamber of Commerce

FLEET ENTERING SAN PEDRO (LOS ANGELES HARBOR) (MODERN VIEW)
The larger ships of the battle fleet operate out of this port as a base.

Courtesy of Los Angeles Chamber of Commerce

LOS ANGELES, 1908

View of West Seventh Street, Los Angeles, as it appeared in 1908 when "Fighting Bob" Evans and his men marched along this street on the occasion of the first visit of the U. S. Fleet.

Courtesy of Los Angeles Chamber of Commerce

LOS ANGELES, 1928
West Seventh Street as it appears today.

LOS ANGELES BUSINESS CENTER
A modern view of Los Angeles, looking east on Fifth Street from Biltmore Hotel.

International Newsreel

Historic Ships *of the* Navy

By ROBERT W. NEESER

Alliance[1]

THE FIRST *Alliance* was a thirty-two-gun sailing frigate constructed at Salisbury, Massachusetts, on the Merrimack River, in 1777, under authority of the Act passed by the Continental Congress on November 20, 1776. She was built by William and John Hacket, and in 1779 carried twenty-eight long twelve-pounders and eight long nines. She had a crew of 250 men.

The *Alliance* got to sea in January, 1779, under Captain Pierre Landais, an unreliable commander, with a crew which, owing to the presence of many English and Irish prisoners, was still more undependable. A conspiracy was detected during the passage across the Atlantic, but by prompt action the mutineers were placed in irons before they could carry out their plans, and the *Alliance* reached Brest safely (February 6, 1779) and landed her passengers, among whom was General Lafayette.

Under his original orders, Captain Landais should have returned directly to America, but he was detained by Benjamin Franklin and placed under the orders of John Paul Jones, who at that time was fitting out a squadron for a cruise in English waters. The *Alliance* was by far the best ship of the squadron, but unfortunately Captain Landais had a temperament which made impossible anything like efficient coöperation between himself and his officers and crew. The squadron sailed from Groix Roads, near Lorient, France, on June 9, 1779, but on the second night out, the *Alliance* fouled the *Bon Homme Richard,* carrying away her own mizzen-mast and the *Richard's* jib-boom. Sailing again from Groix Roads in August, the squadron headed for English waters. On the night of the 26th a gale scattered the vessels. Several captures were made by the *Alliance* which Captain Landais ordered to Norway, in disobedience to Jones' orders, and, as the prizes were immediately given up to the British consul by the Danish authorities, they became a loss to the captors. But the climax to Captain Landais' insubordination occurred on September 23, off Flamborough Head, when, instead of assisting his hard-pressed Commodore, he opened fire upon the *Bon Homme Richard* and also attacked the *Pallas,* which was engaged with the *Countess of Scarborough.*

Upon the arrival of the squadron in the Texel, October 3, 1779, Captain Landais' conduct during the cruise was made a matter of formal complaint to the American Commissioners in Paris. There was a practical unanimity of opinion among the officers of the squadron as to his reprehensible behavior. Several of those on board the *Alliance* attested that they "told Captain Landais at different times that he fired upon the wrong ship; others refused to fire." So Landais was summoned to Paris by Benjamin Franklin and Jones took command of the *Alliance,* all the other vessels of the squadron having been put under the French flag to avoid complications with Holland. The presence of the American frigate, however, rendered the situation daily more uncomfortable, as the Dutch authorities could not indefinitely disregard the importunities of the British ambassador. In consequence, Jones was compelled to hasten his departure. He was ready to sail on December 1 but the wind was not fair. "The enemy keeps a squadron cruising off here," wrote Jones to Franklin on the 13th, "but this shall not prevent my attempts to depart whenever the wind will permit. I hope we have recovered the trim of this ship, which was entirely lost during the last cruise, and I do not much fear the enemy in the long and dark nights of this season. The ship is well manned and shall not be given away."

At last, with a favoring easterly breeze,

[1] This name was given in honor of the treaty of alliance concluded with France in 1778.

and with her best American colors flying, the *Alliance* got away from the Texel on December 27, 1779, "getting the windward of the enemy's fleets of observation in the North Sea," and running through the Straits of Dover in full view of the British fleet in the Downs. The *Alliance* then cruised to the southward and off Cape Finisterre; on January 8, 1780, captured a brig, which was ordered to America. After a brief visit to Corunna, Jones sailed again, but meeting with no success, he headed for Groix Roads where he arrived on February 10.

The *Alliance* was now thoroughly overhauled, repaired and rearmed with guns that had been made for the *Bon Homme Richard,* but which were not ready in time. The essential repairs were completed in April, and she "was thought one of the completest frigates in France." Jones was ready to return to America with the supplies and stores which Franklin was contemplating sending in her. However, the prize-money question was still in abeyance and Jones wished to hasten the proceedings in order to satisfy the claims of his men. He went to Paris to settle the controversy, and in his absence Captain Landais, instigated by Arthur Lee, took possession of the *Alliance* (June 12, 1780). It was claimed that, as Captain Landais' commission as commander of the frigate had not been revoked by Congress, and as Franklin had no power to relieve him, he was still legally in command of the *Alliance*. So Jones relinquished the claim to the command, and the frigate sailed, about July 1, with Arthur Lee on board as passenger, but without the clothing and supplies so much needed by Washington's army. During the voyage the behavior of Captain Landais became so erratic that the safety of the ship was considered imperiled. It was consequently decided to relieve him forcibly of the command (August 10) and to turn the navigation of the ship over to her first lieutenant, who brought her safely into Boston (August 16, 1780).

As soon as Captain Landais' court martial was concluded, the *Alliance* was ordered to prepare for another cruise to France under Captain John Barry, for at that "infinitely critical posture of our affairs" it was necessary to send Colonel John Laurens as special commissioner in order to obtain "an immediate ample and efficacious succor in order to revive public credit and give vigor to future operations." The usual delay and difficulty in obtaining a crew for the ship were encountered, but on February 11, 1781, the *Alliance* finally weighed and stood out of the harbor. Two vessels were captured during the voyage and, after a brief stay at Lorient,[2] Captain Barry again left for Boston. On March 30, "We discovered a conspiracy on board," wrote Barry on June 6, 1781, "the ring leaders we confined and have brought them in here in irons. Unhappily for us we had no seamen on board but disaffected ones, and but few of them, I believe a ship never put to sea in a worse condition as to seamen. On April 2 we fell in with the privateer *Mars* of twenty twelve-pounders, two sixes, and one hundred and twelve men, and the privateer *Minerva* of ten guns and fifty-five men." "One ran close on board of us," wrote John Kessler, the mate, in his narrative of the cruise, "and without any hail fired the whole broadside at us and immediately every one ran off her deck. We had commenced firing, but on discovering their retreat the firing ceased and we boarded them." After this success, the *Alliance* continued her cruise until May 28, when she made two sail which were standing directly for her. It was late in the day, and the strangers, when near enough to remain in sight, hauled their wind and awaited the break of day. It was nearly a dead calm when the action began, on the morning of the twenty-ninth. The sea was perfectly smooth, and as there was no wind, the two light cruisers were able to use their sweeps and select their positions, while the *Alliance* lay without steerage way. For more than an hour the frigate fought at great disadvantage, with the enemy on her quarters, and only one gun out astern to bear on them. "About two o'clock Captain Barry received a wound by grape shot in the shoulder," wrote Kessler. "Some time after, our colors were shot away and it so happened that at the same time such guns as would bear on them had fired and were then loading, and which led the enemy to think we had struck the colors, and manned their shrouds and gave three cheers; by that time the colors were hoisted by a mizzen brail and our firing again began. At this moment

[2] The two main objects of Lauren's visit to France were realized. Money was obtained and a French fleet soon set sail for America.

a small breeze of wind happening, a broadside was brought to bear and fired on the ship and then one on the brig, when they struck their colors at three o'clock." The prizes proved to be the *Atalanta,* sixteen guns, Captain Edwards, and the *Trepassy,* fourteeen guns, Captain Smith. Both vessels were very much cut up, and sustained a joint loss of forty-one men in killed and wounded. Captain Barry made a cartel of the *Trepassy* and sent her to England with the prisoners, but the *Atalanta* was retaken by the enemy while endeavoring to make port. The *Alliance* returned to Boston on June 6, 1781.

It was during the early summer of 1781, while the *Alliance* was in port, that there occurred one of the first cases in which a seaman in the American Navy was sentenced to be hanged. He was tried for desertion and cowardice, under Article 29 of the *Rules and Regulations of the Navy,* and the courts adjudged that he should "suffer the punishment of death, and that he be hanged by the neck on the starboard fore yard arm of the said ship *Alliance* until he is dead."

Convinced that keeping vessels inactive in harbor incurred only "a useless expense," Robert Morris, on September 21, 1781, ordered Captain Barry to make a cruise with the *Alliance* and *Deane.* But these orders were soon after revoked, and instead, the *Alliance* was despatched to France with Lafayette and several other passengers. Captain Barry received minute directions regarding the comfort of his passengers, but "let it be done with discretion," wrote Morris; "remember that we are not rich enough to be extravagant, nor so poor as to act meanly." Captain Barry carried out his instructions to the letter, but in the matter of taking prizes he was not fortunate, and the *Alliance,* after an exceptionally uneventful cruise, returned to Boston on May 13, 1782.

The Continental Navy was now so reduced by losses, that the frigates *Alliance* and *Deane* alone remained in service. In consequence the *Alliance,* which was the Navy's favorite ship, was in constant demand. On August 4, 1782, Captain Barry sailed from New London on a cruise to the West Indies. "After cruising off there for twelve or fifteen days, I retook a sloop from New London and sent her for Cape François. Finding the prizes I had taken of little value either to myself or country and in all likelihood should be obliged to return into port soon for want of men, was determined to alter my cruising ground, I therefore thought it best to run off the banks of Newfoundland." Here he took several prizes, which gave him information of the proximity of the Jamaica fleet. "I then carried a press of sail for four days; the fifth day I took two ships that had parted from the fleet . . . . a day or two after, I took a snow and a ship belonging to the same fleet. Being short of water and a number of prisoners on board, the westwardly winds still blowing fresh, and in expectation of falling in with some more of them, I thought it best to proceed to France." The *Alliance* left Lorient on December 8, and on January 8, 1783, she arrived at Martinique. Here Barry found orders directing him to proceed to Havana where the 20-gun ship *Duc de Lauzun,* recently purchased for the Continental Navy, was awaiting convoy. On the passage to the United States some British vessels fell in with them and gave chase. While running from this force, a large sail was seen on the *Alliance's* weather bow, which was recognized as a French ship of fifty guns. Barry was therefore encouraged to look for assistance from her, and he allowed the *Alliance* to drop astern nearer her consort. One of the British vessels, the *Sybil,* then engaged the *Alliance* but after a sharp action of more than an hour and a half, finding herself hard pressed and much injured, she made signals to the other British vessels and sheered off. The voyage was then resumed. The *Alliance* and the *Duc de Lauzun* became separated off Cape Hatteras, but both reached port safely, the *Alliance* reaching Newport on March 20, 1783.

The *Alliance* was retained in service a year longer. There was a strong sentiment in favor of keeping her permanently, and on January 15, 1784, a committee of Congress reported that the honor of the flag and the protection of the coast required her repair. However considerations of economy prevailed and she was accordingly sold in August, 1785, by the Board of the Treasury for £2,887.

The Second of the Name

The second *Alliance* was a screw corvette authorized by the Act of Congress approved February 10, 1873. She was a wooden vessel of the third rate, of the following di-

mensions: displacement, 1,375 tons; length, 185′; breadth, 35′; draft, 14′ 3″. She was built by the government at the Norfolk navy yard and launched in 1876. Her engines were constructed by the Quintard Iron Works, New York, and consisted of horizontal compound engines of 800 h.p. for which steam was furnished by eight boilers. Her sea speed was 9.98 knots. She carried a crew of eighteen officers and 160 men.

The *Alliance* carried a battery (January 18, 1877) of one eleven-inch smoothbore, two nine-inch smoothbores, one Marsilly sixty-pounder, and two smaller pieces. In February, 1882, she was armed with one eight-inch muzzle-loading rifle, four nine-inch smoothbores, one sixty-pounder breach-loading rifle, and five smaller guns. On August 16, 1894, this battery was changed to six four-inch R.F.'s, four six-pounders, two one-pounders, and three smaller pieces.

On January 18, 1877, the *Alliance* was commissioned at Norfolk and sailed in the following month under Commander Theodore F. Kane. She was attached to the North Atlantic Squadron, and later to the European Squadron. In July, 1880, she cruised on the Atlantic coast, under Commander Arthur R. Yates (February 1, 1879) in search of shoals and other obstructions to navigation. On March 16, 1881, Commander Yates was relieved by Commander Philip H. Cooper.

The necessity of affording relief to the Jeanette Arctic Expedition in 1881 caused the Navy Department to select the *Alliance* for this service, and the ship sailed from Norfolk, on July 16, 1881, under Commander George H. Wadleigh (June 9, 1881), after every precaution had been taken to fit her for the voyage. On July 24, she arrived at the Norwegian port of Hammerfest, and thence she steered for Spitzbergen. However, after cruising as far as latitude 80°00′36″ north, and longitude 8°14′30″ east, she was stopped by the pack ice. She sailed along the edge of this pack and succeeded, on August 20, in reaching latitude 80°10′ North, longitude 11°22′ East—farther north than any vessel of her description had ever been before. On September 25, the *Alliance* left Spitzberger and returned to New York on November 11, 1881.

On December 11, 1882, Commander Allen V. Reed took command of the ship, which, during the year 1883, was engaged in cruising along the fishing banks and in protecting American interests in Haiti. On January 18, 1885 the *Alliance*, now in command of Commander Lewis Clark (July 5, 1884), landed a marine guard at Aspinwall for the protection of the railroad. Commander Clark died on June 7, 1885, at Key West and the command of the *Alliance* then devolved upon Lieutenant Commander George R. Durand, who brought the vessel back to New York, arriving at that port on June 26, 1885.

During the subsequent years, the *Alliance* was attached to the South Atlantic Squadron (1887-1889), to the Asiatic Squadron (1890-1892), to the Pacific Station (1892-1893), and to the Training Service (1895-1901), after which she was stationed at Culebra, in the Virgin Islands, as station and store ship. In the latter part of December, 1892, the *Alliance* had a narrow escape from destruction in the harbor of Apia, Samoa, during a violent storm. She dragged her anchors and struck on a reef, but the "energy and ability" of her engineer force enabled her to work her way off the reef and get into deep water.

The commanding officers of the *Alliance* from 1885 to 1911 were: Commander Charles McGregor (August 3, 1885), Commander George W. Pigman (April 12, 1888), Commander Henry C. Taylor (January 16, 1890), Commander Felix McCurley (May 15, 1891), Lieutenant Samuel P. Comly (July 7, 1892), Lieutenant Commander John C. Rich (July 25, 1892), Commander William H. Whiting (October 22, 1892), Commander Timothy A. Lyons (October 26, 1893), Commander John McGowan (January 19, 1895), Commander Henry N. Manney (October 10, 1895), Commander Albert Ross (January 5, 1898), Commander Francis H. Delano (December 12, 1899), Commander Samuel P. Comly (April 22, 1901), Commander John B. Murdock (January 17, 1903), Commander Clinton K. Curtis (September 21, 1903), Lieutenant Commander James H. Sears (June 7, 1904), Commander Burns T. Walling (July 16, 1904), Lieutenant Commander George R. Salisbury (July 17, 1906), Lieutenant Commander Charles A. Brand (September 13, 1909).

On July 7, 1911, the *Alliance* was placed out of commission at San Juan, Porto Rico, and on August 9, 1911, stricken from the Navy Register.

Some Famous English Sea Tales

By CHARLES LEE LEWIS, *Associate Professor, U.S.N.A.*

THE sea has always played an important rôle in English fiction. In the early great romances like More's *Utopia,* Sidney's *Arcadia,* and Bacon's *New Atlantis* this influence is noteworthy; while in the later well-known classics, Swift's *Gulliver's Travels* and Defoe's *Robinson Crusoe,* written near the beginning of the rise of the English novel, even more of the sea is to be found. In fact, that versatile genius, Defoe, wrote another novel, *Captain Singleton,* which almost deserves to be called the first real sea novel in English literature. This distinction, however, should probably be awarded to the *Adventures of Roderick Random* (1748), the first English novel to portray the character of the seaman with a fair degree of truthfulness and realism.

As might be expected, this novel was written by one who had some experience at sea. Its author, Tobias George Smollett (1721-1771), after a five years' apprenticeship to a surgeon in Glasgow, departed for London with a tragedy which he ambitiously expected would take the city by storm. Miserably disappointed in the fulfillment of his hopes, the young Scotchman would have starved perhaps, had not a friend of the family secured him a warrant as a surgeon's mate on H.M.S. *Cumberland* of Sir Chaloner Ogle's fleet, then fitting out for an expedition against the Spanish in the West Indies. Smollett thus became an eye-witness of the disastrous attack on Cartagena, the great stronghold of Spanish America, an account of which failure he embedded in his sea story. Though the book recounts also many land adventures of Roderick Random, who indeed was not himself a seaman, yet in the characters of Lieutenant Tom Bowling, Captain Oakum, Whiffle, and Rattlin, Smollett revealed seamen virtually for the first time to the reading world. Tom Bowling's speech has the saltiness of the sea and his disposition is breezy and open; he has the seaman's courage, simple philosophy, and generous prodigality to his comrades; and though practical on shipboard, he is ignorant of the world on shore. There are other well-drawn characters of seamen in Smollett's *Adventures of Peregrine Pickle* (1751); but this is in no sense a sea story since its characters are not taken afloat.

Clark Russell has contended that Smollett was not really a sea novelist. "He was at sea," he writes, "for a very short time, and cruised amongst the gallipots of the surgeon in the cockpit, whose scenes he has painted with the brush of a Hogarth. But he was no more a sailor than the doctor who feels your pulse and looks at your tongue. He never went aloft, knew nothing of navigation, probably could not have told you swiftly and correctly the names of the sails and rigging of a ship. But what he did was well done, and I wish there was more of it."[1] On the contrary, Sir Walter Scott declared that, because of Smollett's success in divining the character of the seaman, sketching his outlines, discovering his possibilities, and formulating his lingo, everyone who has written about the sea and seamen since his day has copied more from him than from nature. Smollett's humor is indeed often coarse, and there is considerable licentiousness in his works; but in these respects he was but governed by the taste of his age. His stories are lacking in plot structure, for they are hardly more than a string of episodes more or less closely connected; and his characters, moreover, are inclined to be mere caricatures. Yet his work has an enduring quality that has given him a secure place among the pioneers in the English novel, and his influence on succeeding writers of sea literature will be seen to have been unquestionably great. His *Roderick Random,* therefore, deserves a place in a list of famous sea stories.

After the days of Smollett the English

[1] *Pictures from the Life of Nelson,* Preface, p. viii.

novel retired into the "drawing-room and the Gothic chamber" where the seaman was by no means at home, and some seventy-five years elapsed before there was a writer worthy to wear the mantle of the first great sea novelist. This was Frederick Marryat (1792-1848) whose first sea story was not published until 1829. It is true that Scott's *Pirate* had appeared in 1822; but, as Cooper declared, the story has very little just pretension to seamanship and throws no real light on naval character. Indeed, it is of most interest in that it was the cause of Cooper's writing his *Pilot* which was undertaken by him to show his friends how a sea novel could be written by one who had had some acquaintance with life on the sea. Cooper's sea stories antedated those of Marrayat by several years; the former was influenced by the romanticism of Scott, while the latter followed in the footsteps of Smollett, who was a realist.

Marryat, after several attempts to run away to sea, was placed by his father as a midshipman on the frigate *Imperieuse* in 1806, at the age of fourteen, under Lord Cochrane. By the end of the Napoleonic wars in 1815, Marryat had reached the rank of commander; meanwhile he had taken part in more than fifty engagements, having seen service in the Mediterranean, on the Spanish coast, in North America, and in the West Indies. Afterwards he served also in the East Indies during the Burmese War. He often received honorable mention for bravery in action, and in 1818 he was awarded the medal of the Humane Society for "at least a dozen" gallant rescues. Having published his first novel and finished the writing of a second, *The King's Own*, (among his best), he retired from the naval service in 1830, and became an industrious and successful novelist, opening up a fresh new field "full of vivid lights and shadows, lighthearted fun, grinding hardship, stirring adventure, heroic action, warm friendships, bitter hatreds." [2]

Lovers of Marryat are divided as to whether *Peter Simple* (1834) or *Mr. Midshipman Easy* (1836) is his greatest novel. Probably the former should be awarded the palm as his masterpiece, especially because of its inimitable character, "Gentleman Chucks," the boatswain. Besides, there is in it the hero, Peter Simple, the greenest midshipman that ever entered the British Navy. Never before had there appeared better nautical description, and more faithful delineation of seamen, fairly bubbling over with geniality and humor. *Mr. Midshipman Easy* also contains a character of great originality, called "Equality Jack," who went to sea to find equality and the rights of man, and was always ready to "argue the point." Needless to say, he did not find what he expected, but he came "through the mill" with all his foolish ideas knocked out of him and became a man of sterling character, able to shoulder heavy responsibilities. Other stories by Marryat, which the critics rank high, are: *Snarley-yow, or the Dog Fiend, The Phantom Ship, Percival Keene*, and *Masterman Ready* (juvenile).

Like those of Smollett, Marryat's stories are largely devoid of plot and are hardly more than a series of episodes in which the hero plays the leading part and thus gives the story a form of unity. He has, however, an admirable gift of narration and an unfailing fund of incidents and of humor. He is at his best in describing a ship; not the water. "To a multitude of readers," wrote Conrad, "the navy of to-day is Marryat's navy still. He has created a priceless legend." He also added that Marryat "loved his country first, the Service next, the sea perhaps not at all." [3] Clark Russell declares, "Marryat is one of the few novelists by the extinction of whose works our national literature would be a heavy loser. He is much more historical than history; and in his pages we have such pictures of life aboard the old line-of-battle ships, frigates, ten-gun brigs, cutters, and what not; there is so much vivid depicturing of cockpit existence, forecastle yarning, masthead emotions, and of the wonderful capers which used to be cut by midshipmen, that a man fresh from the perusal of Marryat's novels might fairly feel that he pretty well knew as much about the Royal Navy, as it was fifty years ago, as if, like Midshipman Easy, he had argued the point with first lieutenants, or, like Percival Keene, raised an alarm of fire on board ship by burning a purser's wig." [4]

While Marryat wrote about fifteen novels of the sea, the next author to merit consideration produced only two; namely, *Tom*

[2] David Hannay in the *Encyclopædia Britannica*.

[3] "Tales of the Sea" in his *Notes on Life and Letters*.

[4] "Sea Stories" in *Contemporary Review*, XLVI, p. 346.

Cringle's Log and *The Cruise of the Midge*, both of which appeared serially and anonymously in *Blackwood's Magazine*, 1829-1833 and 1834-1835 respectively. Their author, Michael Scott (1789-1835) was accordingly a contemporary of Marryat's, and like him was largely influenced by the writings of Smollett. But unlike Marryat he was not a seaman and he did not see service in the Royal Navy; on the contrary, born the son of a Glasgow merchant, he went out in 1806, the same year in which Marryat joined the navy, to Jamaica to manage some estates for a Mr. George William Hamilton; afterwards he joined a business firm in Kingston. This latter position led to his making frequent voyages to all the islands of the West Indies and to the Spanish Main, during which he laid up a rich store of incidents and thoroughly familiarized himself with the life and scenery of that region. All of this he drew upon in the writing of his novels, which are filled with descriptions of the West Indian life, and accounts of hand to hand engagements with pirates, hurricanes, yellow fever, adventures with wild beasts, and frolics ashore, which he called "tropical high-jinks."

Though Scott's stories were devoid of plot, and merely episodic in character like those of Smollett and Marryat, yet his narratives are marked by great vigor and force, variety of characters, rapid change of incidents, and picturesque descriptions of pirates, shipwreck, and other strange happenings on shore. Christopher North declared that he was "the best sketcher of sea-scenery that ever held a pen." Clark Russell ranked him alongside the Americans, Melville and Dana, as a "poet of the deep" who has "interpreted the meanings of the ocean and informed the ships and calling they write about with the spirit of the sea, even as the song of the wind in the rigging of a vessel becomes a part of her life as she leans before the blast."[5] Though Russell regrets that Scott was too much under the influence of Byron, and that his stories are irradiated with too much blue-fire and his descriptions of horrible and monstrous death scenes border upon pure melodrama, yet he regards him a "finer writer and a bigger man" than Marryat, in that "he has never been approached in his power of describing a ship," in "his profound poetic perception of the deep and its mighty surface-wonders of shadow and light, calm and storm," in his descriptions of the tropical magnificence of the scenery of the West Indies with the "marvelous grandeurs of sunsets and sunrises, the tempests of rain flashing up the phosphorescent sea into a sheet of fire, and the framework of the West Indies regal with mountain and radiant with the glories of a thousand shining growths."[6]

By the middle of the century Marryat was dead and Cooper had written his last sea tale, *The Sea Lions* (1849). Dana's *Two Years Before the Mast* had appeared in 1840, and Melville's *Moby Dick* was published in 1851. George Cupple's *The Green Hand*, the first really great sea novel to portray life in the merchant service, bore the date of 1848; while an excellent romantic novel of the time of Drake and the Spanish Armada was published in 1855 under the title of *Westward Ho!* Its author, Charles Kingsley, however, was a landsman. A quarter of a century was then to elapse before the appearance of another really great sea novel. This was Russell's *The Wreck of the Grosvenor* (1877).

William Clark Russell (1844-1911) was born in New York of English parents, his father being the author of popular songs like "Cheer, Boys, Cheer." He first crossed the Atlantic at the age of six weeks in an orange-box, this box however, being an improvised cradle in a berth in a Collins Line packet. As a schoolboy in Dr. Bewsher's Academy in Boulogne he planned to run away with Charles Dickens' youngest son Sidney, and make a fortune shooting eider-ducks in Norway. This ambitious plan, of course, did not materialize; but at the age of thirteen and a half his father finally consented to his going to sea in a merchantman. He made three voyages to Australia and India, and after eight years' service, during the last two years of which he saw more of China than he relished because of the war between that country and Great Britain, he neglected his duties as fourth mate on the homeward voyage and was logged and "broken." Leaving the merchant marine, he set himself to writing romantic fiction under the pseudonym of Sydney Mosten. At this he made little headway and less money, but it served as his apprentice-

[5] *Ibid.*, p. 344.

[6] *Ibid.*, p. 351.

ship to the craft of writing. Finally, at the suggestion of a friend, he undertook the writing of a realistic sea story, his romantic novels, strange as it may seem, having had hitherto nothing to do with the sea. As a result, *John Holdsworth, Chief Mate* appeared in 1875, and two years later his *Wreck of the Grosvenor* made him famous. For the next thirty years he became a prolific and popular writer, producing more than fifty volumes of novels, sketches, and short stories of the sea.

The idea of the *Wreck of the Grosvenor* was suggested to Russell by an old sailor, Henry Thornton, who often talked to him about sailors' wrongs, the hardships of life in the forecastle, the poor food, the wholly inadequate wages, and all the rest of the injustices suffered by a common sailor in the merchant service. This book launched Russell as a crusader for the British mercantile sailor and it had a phenomenal run, for those days. It should be noted in passing that there was a real ship by the name of *Grosvenor,* an East Indiaman, which was wrecked on the east coast of Africa in 1782 with the loss of a cargo of precious stones, specie, bullion, ivory, and other treasure worth over two millions sterling, for the salvage of which many attempts have been made. Only eighteen of the one hundred seventy people on board the ship, after incredible hardships, succeeded in reaching Dutch settlements to the south; none of the white women passengers survived unless the tradition is true that some of them were made the wives of barbarous Kaffir chieftains. Indeed, a Danish ethnologist has recently found in the hinterland some one hundred fifty miles distant from the scene of the wreck a number of "sad-eyed, curiously aloof, pale-skinned Negroes" who might be the descendants of those ill-fated white women. Russell, however, took not a single detail from this historical shipwreck for his sea story—only the title. This is certainly his most widely known story, and it is probably his masterpiece. Riesenberg mentions it first in a discussion of books of the sea in his *Vignettes of the Sea,* calling it a "bully sea story." In a vote taken at the National Marine Exposition in New York in April, 1920, for the Ten Best Books of the Sea, the *Wreck of the Grosvenor* came thirteenth. William McFee the well known writer of sea stories, voted for Russell's *Marooned;* while others chose his *List, Ye Landsmen* and *My Shipmate Louise.* Perhaps the large number of his books of excellent quality to select from accounts for the fact that no single one was placed among the Ten Best. Russell himself, according to his son, considered *The Death Ship* as his finest achievement; while *A Sea Queen* was thought by him to be his greatest work, as far as female characterization was concerned. *The Death Ship* may be interestingly compared with Marryat's *The Phantom Ship,* for both of them are based on the legend of the Flying Dutchman.

In his style, Russell followed in the wake of Dana and Melville, and particularly was he influenced by George Cupples's *The Green Hand.* His stories have more definitely constructed plots than do those of Smollett, Marryat, and Michael Scott. They are also real sea stories in setting and the reader is impressed with the fidelity of the characterization and the nautical language of the sailors. His strength did not lie in his literary style; perhaps, rather, in his subject matter. As his son writes, "He had a great fluency of language and a particular wealth of adjectives, but he could not be bothered with that laborious polish by which alone the highest literary art is achieved. Nor am I sure that much of his work is not the better for the natural, unrefined boldness of its coloring. That he was deeply imbued with the mystic spirit of the sea is self-evident to any reader of his books."[7]

In the voting for the Ten Best Books of the Sea, already referred to, the one which led all the rest was Stevenson's *Treasure Island,* followed in the order of standing by Dana's *Two Years before the Mast,* London's *Sea Wolf,* Kipling's *Captains Courageous,* Jules Verne's *Twenty Thousand Leagues under the Sea,* Bullen's *Cruise of the Cachalot,* Riesenberg's *Under Sail,* Marryat's *Mr. Midshipman Easy,* Conrad's *Lord Jim,* and his *Nigger of the Narcissus.* It is indeed a high honor to lead in popularity such a list of distinguished sea stories.

Robert Louis Stevenson (1850-1894), the third Scotchman among the six great sea novelists which this article is to emphasize, was not a seaman, though he did come of a family of lighthouse engineers and as a

[7] "When the Sea Came into Literature" by Sir Herbert Russell, in *International Book Review,* May, 1925.

lad accompanied his father on official visits to lighthouses on the Scottish coast. Being of fragile health from infancy, he had to give up engineering, in the study of which he had made considerable progress; then through the study of law he finally gravitated to literature. Only a comparatively small portion of his literary work has to do with the sea, and those of his romances which do deal with the sea are insular in setting, like *Robinson Crusoe* to some extent. None of his heroes are seamen by profession but become sailors by circumstance. Even Long John Silver, Billy Bones, and Teach are thought of more as brigands than as mariners. Still Stevenson loved the sea, and had learned a great deal about nautical life in a yachting cruise with Sir Walter Simpson in 1874, then as a steerage passenger across the Atlantic to America five years later, and, finally, during the last six years of his life, in a voyage to the South Seas and numerous cruises among the islands of the Pacific.

Although Stevenson's plots are somewhat loosely constructed, he was an excellent story-teller and none of his predecessors had given the sea story the literary finish that he furnished. The quest for gold is the primary motive in his sea stories; women do not, usually, play important rôles in them. There are thrilling sea episodes in his semi-historical romances, *Kidnapped* (1886), *The Black Arrow* (1888), *The Master of Ballantrae* (1889), and *Catriona* (1893) (often entitled *David Balfour*); but there is much more of the sea in his novelette, *The Merry Men* (1886), and in the romances of the South Seas, *The Wrecker* (1892) and *The Ebb-Tide* (1894), which were written in collaboration with his step-son, Samuel Lloyd Osbourne. The action of *The Wrecker* centers about the wrecking of a ship on the lonely island of Midway in the Pacific under mysterious and tragic circumstances. In *The Ebb-Tide* three beachcombers run away with a schooner load of champagne and are triumphantly overcome by a missionary. This story Jack London thought was Stevenson's most powerful work.

It will be noted that, of the Ten Best Books of the Sea mentioned above, there were two by Conrad. This is perhaps a true indicator of the relative popularity of this great novelist of the sea. Joseph Conrad (Teodor Jozef Konrad Korzeniowski) (1857-1924) was born in Poland. At the age of seventeen he joined the French merchant marine. Three years later, after some adventures in the Mediterranean and two voyages to the West Indies, he landed in England. After spending five months in the coast trade, learning English, he joined the British merchant marine as an ordinary seaman, eventually rising to the rank of master and meanwhile becoming a citizen of Great Britain. Conrad then sailed all the trade routes of the globe except the western to North America. After sixteen years in the mercantile service, he retired from the sea upon being invalided home with a fever which he had contracted on the coast of Africa. During his last five years afloat he had written a novel in his hours of leisure, and relieved of sea duty, he set out courageously on a literary career, under the influence, he said, of Cooper and Marryat.

In addition to many short stories of the sea he wrote some dozen sea novels, about half of which are Oriental in setting. Of the remainder two have their scenes laid on the Mediterranean, and the others have to do with the South American seaboard and the West Indies. As was true of Stevenson, many of Conrad's sea stories might better be called "romances of the harbor" for he does not often concern himself with the high seas. Even in *Lord Jim*, which many consider his masterpiece, only the first part of the story has to do with the sea. This is true, in varying degrees, of his other sea stories with the notable exception of his *Nigger of the Narcissus* and some of his short stories like *Youth* and *Typhoon*, which approach the novelette in length.

The Nigger of the Narcissus (1898) describes the voyage of a merchant ship from Bombay to London, during which a St. Kitts negro wields a strange influence over the captain and his crew through their inability to tell whether he was really ill or only malingering. This was the story which William McFee says first made him aware of Conrad as a writer. It was while he was ashore at Glasgow that he first read the book, and when he came aboard with it under his arm he saw his own ship and his mates "transfigured to heroic dimensions like the somber and enormous shadows of grown-ups on the nursery wall."[8] He came upon his chief "standing by the door of

[8] "The Sea and Conrad" in *The Bookman*, 53: 102.

the port alleyway, stripped to the waist, his large pale hairy arms folded, his bosom screened from view by his patriarchal beard, smoking a cigarette in the end of a long black holder." "Well, did you have a good time?" he asked. McFee replied, "Yes; I have a book here I would like you to read." The chief took the book and began to turn its pages. At midnight, McFee noticed a light still burning in his room and found the old man still standing there "turning the last immortal pages." He had put on an "old patrol coat and buttoned it absently over his beard." "That book," he declared, "makes you feel, somehow."

In the character of the old seaman Singleton in this book, Conrad has done in modern literature for the seamen what Millet with his brush did for the French peasants. This monumental and elemental character practically sums up Conrad's philosophy of the sea, in that the sea tests all the superficialities and pretenses of civilization and sooner or later reveals the real character of a man and the fiber of his stuff. "It is the capacity for suffering," he writes, "which makes a man august in the eyes of men." All his seamen lead melancholy lives, and the best of them come to tragic ends. To Conrad, the sea and life itself, though beautiful, were cruel. However, his attitude towards his ships, which are usually sailing vessels, is affectionate; and they are portrayed as beautiful and romantic. As a painter of seascapes Conrad is undoubtedly the greatest in the history of the sea novel. His descriptions of Oriental waters are richly colored, and an impression of reality is produced by playing upon every sense of the reader until he is completely transported to the romantic world which Conrad's imagination has created. In his purely nautical stories women play unimportant rôles; but in his "romances of the harbor" they become directing forces in the lives of men. As he declares in *The Arrow of Gold,* "Woman and the sea revealed themselves to me altogether, as it were: two mistresses of life's values. The illimitable greatness of the one, the unfathomable seduction of the other working their immemorial spells from generation to generation fell upon my heart at last; a common fortune, an unforgettable memory of the sea's formless might and of the sovereign charm in that woman's form wherein there seemed to beat the pulse of divinity rather than blood."

All Conrad's seafaring novels are heavily charged with his own experience, and all his heroic men are seamen or connected with the sea. He regards them as his brothers. His peculiar greatness as a sea novelist arose, perhaps, from the rare combination in him of seamanship and experience together with extraordinary imagination and a singular power of expression. Consequently, Conrad is enabled to write not novels *about* the sea but literally novels *of* the sea. For this reason he should be regarded as the greatest novelist of the sea.

In closing, one should mention, at least by name, some of the living writers of the sea. Kipling's *Captains Courageous* (1897) is a classic story of the fishermen on the Grand Banks; Bullen's *Cruise of the Cachalot* (1898), though not fiction, shows the influence of Melville's *Moby Dick* in subject matter and of Dana's *Two Years Before the Mast* in style and manner of treatment. W. W. Jacobs, widely known for his humorous short stories of the sea, is also the author of several sea novels; while William McFee, though now an American citizen, might be mentioned here because of his *Casuals of the Sea, Captain Macedoine's Daughter,* and *Command.* Captain David W. Bone, Henry de Vere Stacpoole, John Masefield, Rafael Sabatini, Morley Roberts, "Bartimeus," "Taffrail," and H. M. Tomlinson have all written sea stories well worthy of serious consideration. There are still many others whose works may be read with great pleasure and profit. In fact, the history of no people in modern times has been so wrapped up in the sea and ships as has been that of the English, even the warp and woof of the language containing salty nautical words and phrases which are used daily unawares.

Navy Mine Depot, Yorktown, Virginia

By COMMANDER A. H. MILES, *U. S. Navy*

DURING the World War, when the United States undertook the stupendous operation of laying the North Sea barrage, it was necessary that there be a plant on the Atlantic seaboard where mines, after being manufactured, could be stored, assembled, loaded, tested and issued to the Navy. Also, a place was needed to build up and train personnel in the adjustment and operation of mines. On August 7, 1918, by presidential proclamation, a tract about eighteen square miles near Yorktown, Virginia, was selected as the best location to concentrate the Navy's mine activities.

It is an oddity of past peace-times that old seventeenth century Yorktown has been forgotten and neglected in the strategic scheme of things military. Yet, in the American Revolution, the War of 1812, the Civil War, and in the World War, the naval and military authorities were not long in rediscovering quiet little Yorktown, with the consequence that many events of world-wide significance have taken place there. In 1918, the imprint of war left this section of the Virginia peninsula with an army post permanently located at Fort Eustis, Virginia, ten miles from Yorktown, the Navy Fuel Oil Station at Yorktown, and the Mine Depot, on the York River, two and one-half miles above Yorktown.

The reasons for selecting Yorktown as a Mine Depot are many. It is conveniently located with respect to the Naval Operating Base at Hampton Roads, the Norfolk Navy Yard, and the fuel bases of the Fifth Naval District. Transportation facilities are unexcelled. The northwest boundary of the depot is formed by the main line of the Chesapeake and Ohio Railway and the northeast by the navigable York River accessible to the largest ocean-going vessels.

Its location to the westward of Chesapeake Bay, ten miles within the winding mouth of the York River, particularly lends itself to protection from air, land and sea.

The Mine Depot is twenty-three miles from Newport News along the State concrete highway and twelve miles by motor from the old colonial capital at Williamsburg.

The total acreage is 12,562, subdivided into 11,288 acres of hard, marsh and water land, and 1,274 acres of underwater land, making it the largest single reservation in the United States under naval control.

To afford adequate protection of the five-mile waterfront, the State of Virginia conveyed to the Navy Department in fee simple all underwater land to the pier-head line.

A large proportion of the tract as originally commandeered consisted of cultivated farm lands, but most of the old houses have been removed, and the cleared land allowed to grow up with underbrush and trees. At the present time eighty per cent of the Mine Depot is heavily wooded. A sawmill for the manufacture of railroad timber and lumber is kept in operation as funds permit and, with prudent conservation, a continuous supply of timber is assured. In this part of Virginia, it is but twenty-five years from "farm to forest."

There is comparatively little strictly smooth ground in the Depot. The terrain is generally rolling with occasional level tracts estimated to aggregate not over ten per cent of the entire area. There are many low-rising hills reaching a maximum elevation of ninety feet above sea level, and the entire waterfront is bordered by bluffs ranging from fifty to one hundred feet high. At extreme low water, the foreshore extends several hundred yards channelward.

The York River constitutes the northeastern boundary of the depot. It is a tidal estuary of the Chesapeake Bay about one mile and a quarter in width at the Mine Depot and is navigable for a distance of forty miles to the town of West Point (named for John West, an early settler). There are several small creeks in the Depot flowing

from high ground into the York, most of which are tidal for a considerable distance from their mouth. These streams are shallow and only navigable to small flat-bottom boats.

Within the Depot there are eighteen miles of sand, clay, and gravel road. The main roads are excellent for automobiles and starting from the main gate there is a charming drive for motor cars, several miles of which are along the banks of the York River. There are also twelve miles of standard gauge railroad directly connected with the Chesapeake and Ohio Railway at Lee Hall, Virginia.

The fresh water supply for the Depot is obtained by gathering the water of five springs into a central impounding basin. The water here is chlorinated and pumped to gravity tanks for use. To prevent river pollution, two sewage plants are in constant operation.

All told, there are at this writing 192 persons residing within the limits of the Depot. This community consists of officers and families, marines, navy enlisted personnel and civilian employees and their families. There are ten sets of officers' quarters and twenty-four sets of civilian quarters. A special bus takes the Depot school children to the Public School at Yorktown.

The marine guard consists of one commissioned officer, three warrant officers and fifty-eight enlisted men. The borders of this expansive tract are under daily surveillance and guarded against trespassers by a marine mounted patrol. One of the chief functions of the marine guard is fire protection. It is equipped to fight any kind of fire and exercised to reach the scene quickly anywhere within the Depot limits. Brush and forest fires are potentially probable during late fall or early spring and are carefully guarded against. The presence of a large civilian community is a distinct asset because a successful fight against a fire of this nature depends largely upon numbers.

To guard against danger of fire due to use of firearms or to the presence of persons in the wooded areas, the shooting, hunting and trapping or the molestation of birds and wild animals on the lands of the Mine Depot were prohibited by order of the Secretary of the Navy in 1921. Birds and animals indigenous to the country thus multiply according to natural laws and, thanks to this protection, are now expanding beyond the Depot limits to gladden the heart of the countryside sportsman.

Fauna and Flora.—We find the Mine Depot stocked with deer by the State Game Commission. Squirrels, rabbits, raccoons, opossums and other wild animals abound.

The area has also been artificially stocked with the Chinese ring-necked pheasant and the bob-white quail. Large flocks of exquisite wild turkeys, native to the soil, make the woodlands their home.

Of the song birds there is a profusion, and in season the ponds and creeks are visited by many varieties of migratory birds, such as mallard and canvas back duck.

York River is noted for its fish. The ordnance wharf is a favorite resort for the angler and a variety is obtainable here, notably the striped bass (rock) ranging in weight from one to twenty pounds. The oysters and clams obtained at this point of the York rival the best.

For the fresh water angler, one of the ponds (Bracken's) has been stocked with bass by the Federal Bureau of Fisheries and good sport here is assured.

The forests abound in the evergreen conifers and there are several varieties of oak and nut trees. On the abandoned farm lands many fruit trees of various kinds are found.

In springtime a riot of dogwood, wild plum, and other blossoms beautify the woods. This particular section of Virginia is famous for the gorgeous landscape effects bestowed by the exuberant Scotch broom *(planta genista)*. This golden legume doubtless was introduced from Great Britain with the fodder brought over for the horses of Cornwallis' army.

Indian Field.—At the time of the arrival of the whites, this region was occupied by the Chiskiack Indians of the Algonquin race, whose chief town was established at what is now known as "Indian Field." The name of the tribe meant "wide land," "broad place," which is quite descriptive of the locality where the Indians lived. This expanse of open level land, bordering on the river and surrounded by luxuriant pines, was in 1612 an Indian wigwam village. The chief of the tribe was Ottahotin (under Powhatan). On the site of this Indian village, facing the river, are now six sets of officers' quarters including the residence of the Inspector of Ordnance in Charge. The

Indians called this river "Pamunkey" but the English at their coming gave it the name of "Charles River" in honor of Prince Charles, afterward King Charles I. It later was renamed "York" in honor of the Duke of York, soon to be King James II.

The need of an English settlement in this region was felt as early as 1611 and Sir Thomas Dale, deputy governor, in a letter to the Earl of Salisbury, recommended a fortified place at Chiskiack (Indian Field). Then, after the Indian massacre of 1622, when the Chiskiacks deserted Indian Field and moved to the Pyanketank River, the idea of "winning the forest" by running a pale (palisade or barrier for defense purposes) from the James River to the York River and the planting of a settlement on the latter took strong hold on the colonial governor, Sir Francis Wiatt, and his council. This scheme was regarded as the best means to ward off Indian attacks and it was agreed to build palisades defended at intervals by stock houses. Nothing was done, however, until the coming of Governor Sir John Harvey, when the project was carried into execution. At a meeting of the council on October 8, 1630, as appears from a deed recorded at Yorktown, an order was entered offering as an encouragement "for secureing and takeing in a tract of land called the forest, bordering upon the chiefe residents of Pamunkey king, the most dangerous head of ye Indian enemye" fifty acres to every person who would settle the first year on Charles River and likewise twenty-five acres to every person the second year. At the same court two tracts of 600 acres each were granted to John West, brother of Lord Delaware, and to Captain John Utie, later commander of the new settlement.

Bellfield.—The six hundred acres of land granted to John West extended eastward in the present Mine Depot from Felgate's Creek, taking in what was then, and is still, known as "Bellfield," which was used during the World War as an aviation training camp. The abandoned hangars and buildings have been salvaged. Here his son, John West, the first child of English parentage in the York River settlement, was born in 1633.

In 1650 the elder West sold the property to Edward Digges, Esq. (later Governor Digges), a son of Sir Dudley Digges, master of the rolls to King Charles I. This plantation is noted as the scene of the first attempt by the Colonists to raise silk worms for the production of silk planned to compete with the Orient. Two Armenians were employed to assist but the industry proved a failure. To this day there is seen on the estate as a reminder numerous mulberry trees transplanted from abroad.

The estate continued in the Digges family for over one hundred years, during which time it was noted for its flavored plant of sweet-scented tobacco known as the "E. Dees," which never failed to bring in England "One shilling on the pound when other tobaccos brought not threepence." The original Bellfield house was a brick structure but has long since disappeared. Naturally, this being the home of Governor Digges, one time colonial governor[1] of Virginia, it is a particularly revered spot to Virginia antiquarians. The burying ground, nearby, holds among others, the weathered tomb of Governor Digges inscribed as follows:

To the memory of EDWARD DIGGES Esq.
Sonne of Dudley Digges of Chilham in Kent Kn^t & Bar^t Master of the Rolls in the reign of K. Charles the First. He departed this life 15th of March 167⅝ in the LV year of his age, one of his Mag^ty Councill for this his Collony of Virginia.

A gentleman of most commendable parts and Ingenuity, the only introducer and promoter of the SILK manufacture in this Colonie, And in every thing else a pattern worthy of all Pious Imitation. He had issue 6 sonne[a] and 7 daughters by the body of ELIZABETH his wife who of her conjugal affection hath dedicated to him this Memorial.

An interesting feature in connection with Bellfield is an ancient shell deposit (marl) near the river which indicates that in the Miocene period this land formed the bed of the ocean. Geologists frequently visit here for study and to secure specimens of prehistoric mollusks.

Ringfield.—In the angle formed by Felgate's Creek and King's Creek,[2] settled Captain Robert Felgate, a prominent ship captain from London, who made his will in 1640 leaving his estate to his brother, William Felgate, a skinner of London. At William Felgate's death, his widow, Mary, married in 1660 Captain John Underhill, Jr., from the city of Worcester, England, who resided here until his death.

[1] Held office from March 30, 1655, to March 13, 1658, succeeding Governor Richard Bennet.

[2] Forms west boundary of depot.

From Underhill, the property went to Joseph Ring, a prominent lawyer, who probably built the picturesque brick home which, unfortunately, was destroyed by fire since acquisition by the government (December 14, 1920). This house was the residence of the first Inspector of Ordnance in Charge who, on October 5, 1920, moved to the new quarters at Indian Field. Antiquarians consider its loss (probably of incendiary origin) most regrettable as it was judged a rare example of early seventeenth century colonial architecture.

Stony Point.—On the site of the seaman gunners' quarters (now used as marine barracks) was another of the old homes on the York known as "Stony Point." The plantation of 800 acres was owned shortly after the Revolution by an Englishman named John Bracken, who, after serving for a long time as professor of the grammar school at William and Mary College, Williamsburg, Virginia, was president thereof for two years, 1812-1814.

There is an interesting bit of history concerning the naming of "Stony Point." A young lieutenant, James Gibbons, who was a gallant Revolutionary officer, on July 16, 1779, led one of the three advanced parties known as the "Forlorn Hopes," when General "Mad" Anthony Wayne carried by storm the fortress of Stony Point, New York. Of his twenty men, seventeen were killed or wounded. Thereafter he was known as the "Hero of Stony Point." This young soldier afterwards became Colonel Gibbons, U.S.A., who resided here, and later, until his death, occupied the post of collector of customs in Richmond, Virginia. To this day the spot is called "Stony Point" in memory of Colonel Gibbon's bravery.

Shortly before the Civil War, Stony Point was purchased by John Randolph Coupland, great-grandson of Benjamin Harrison, signer of the Declaration of Independence.

The house, a large brick dwelling, was surrounded by attractive grounds with terraces extending down to the river's edge. Mr. Coupland had lived here only a short while when a disgruntled negro slave, whom he had brought from his mother's plantation in Alabama, set fire to a trunk in the attic and the valuable home was totally destroyed.

Lee House.—The Lee House, located about two miles off the river in the central portion of the Depot, is an example of early colonial architecture, one story and a half high with dormer windows and a chimney at each end. It has been the home of nine generations of Lees. Henry Lee obtained in 1641 a certificate from York court for 250 acres of land which was due him for the importation of five persons into the colony. This Henry Lee was justice of York county in 1648 and a member of the House of Burgesses from York.

The Lee House was built in 1649, burned in 1915, and rebuilt with the old walls on the same foundation, the original type of architecture being carried through in detail. Among other quaint styles of architecture, one notices very small windows made so, it is believed, that wandering bands of hostile Indians would find difficulty in shooting their arrows through. The family burial ground, in the front yard of the home, is in a good state of preservation and protected by an iron enclosure. Many members of this Lee[a] family rest here, the number unknown but presumably large. A quaint system of recording the deceased is seen, for, instead of tombstones being erected over the graves, the bodies were interred and the names cut on small stone slabs cemented to the central monument.

Continental Road and Black Swamp.—A most interesting historical relic is that section of the road passing through the Mine Depot which connects Jamestown on the James River with Yorktown on the York, passing through the colonial capital of Williamsburg in the center of the peninsula. This road was originally an Indian trail and is probably not antedated by any other road in the United States, having been continually in use as a highway for 300 years.

From a historical viewpoint, the road first comes to notice when the Revolutionary Army under George Washington, composed of his own troops, Americans under Lafayette and the French under Rochambeau, marched from Williamsburg in one day to Yorktown to the investiture of Lord Cornwallis and to the deciding battle of the Revolution. Official reports tell us that the French fleet landed troops at Jamestown,

[a] General R. E. Lee not related.

marched them to Williamsburg, and made a junction with Washington's army which had just come down from the north, and with Lafayette, who had been dogging Cornwallis's footsteps for many months.

Upon reorganization, this picturesque army, many clad in new bright colored uniforms lately issued, left Williamsburg and marched through the road, four miles of which is in Mine Depot property. At noon the army halted for rest at a place shown on the maps of that period as the "French Ordinary" or "Halfway House." The house is no longer standing but its site is recollected by the oldest inhabitants of York county. In the days of horse and stage it was necessary to have these stopping places for the traveler to rest and refresh himself.

George Washington, in his journal, describing the siege of Yorktown under the date of September 18, says:

> Having debarked all the troops and their baggage, marched and encamped them in front of the city (Williamsburg) and, having with some difficulty obtained horses and mules sufficient to move their field artillery, intrenching tools, and such other articles as were necessary, we commenced our march for the investiture of the enemy of York.
>
> The American Continental and French troops formed one column on the left, the first in advance, the militia, composed the right column and marched by the way of Harwood's Mill; half a mile beyond the Halfway House, the French and the Americans separated, the former continued on the direct road to York by the brick house, the latter filed off to the right for Mumford's bridge, where a junction with the militia was to be made.

The site of the Halfway House is appropriately marked to commemorate the occasion.

During the Civil War, the highway was used at various times by the Confederate and Union troops, the largest body of men probably being General McClellan's army, who took this route on the advance up the Virginia peninsula. At places where the Army halted, entrenchments were thrown up which can be dimly discerned to this day running at right angles to the road. In digging foundations for buildings here, Civil War muskets[4] and other equipment have been unearthed.

At one point of the road, known as "Black Swamp," where a ravine, formed by one of the arms of Felgate's Creek, intersects the road, the traveling was always difficult. The road was soft with treacherous quicksand and there have been many stories of people being mired here at night and fiercely attacked by swarms of mosquitoes while endeavoring to extricate themselves. Such an experience befell General McClellan's army, who found this point an almost impassable barrier for several days, particularly for his heavy impedimenta. An old inhabitant relates that to overcome Black Swamp the soldiers laid a corduroy road of pine saplings which remained for many years afterwards. A culvert and slag road now obviates the menace.

There is a legend of the Black Swamp which goes thus:

> A coach containing two beautiful ladies with their escorts was returning from a ball given at the Yorktown tavern. They drove too near the dreaded quicksands of Black Swamp and were engulfed never to be seen again. The superstition of the country folks is to the effect that on a certain night of each year at midnight one hears the laughter and chatter of the charming belles and their gentlemen, the clatter of wheels and horses' hoofs, the crack of the whip, and the coachman's "get up" and sees a ghost-like resemblance to the old coach dashing down the hill to disappear in the swamp again!

French Earthworks.—When the French troops of Washington's army deployed before Yorktown, three regiments on the left were encamped on what is now Mine Depot property. These were under the command of General St. Simon, borrowed from the Governor of San Domingo and brought up from the West Indies in De Grasse's fleet. The regiments were as follows: Agenois under Colonel Marquis d'Audechamp, Gatenois under Colonel Marquis de Rostaing, and Touraine under Colonel Viscomte de Pondeux. The works thrown up by these regiments are distinctly visible today in the densely wooded eastern section near the Yorktown Road.

York-Hampton Parish Church.—On now government property also stood the church of Hampton Parish near the river in the neck between King's and Felgate's Creeks. About 1700, the first site was abandoned and a church of brick built on the ridge near the head of Felgate's Creek. This church, about 1706, was united with the parish at Yorktown and from henceforth was known as the "York-Hampton Parish." For a long time the minister who officiated at Yorktown had under his charge the church

[4] Presented to museum, U. S. Naval Academy.

at the head of Felgate's Creek, still referred to as old "Cheesecake" church (Cheesecake being a corruption of Chiskiack). It was torn down during the Civil War and used as chimney brick for the quarters of Union officers billeted at Williamsburg.

Mason Row.—The first home to be erected where the officers' quarters now stand on Indian Field was owned by the Mutter family, who lived there early in the Seventeenth Century. This house faced an avenue bordered by magnificient cedar trees such as can be seen on approach to many of the ancient estates of England and some few colonial manor houses of Virginia. This stately grove, several centuries old, gives a solid bank of shadows as one drives through and is still standing to beguile the eye and charm the visitor. Six sets of quarters now overlook the York River from a high bluff, being called "Mason Row" in honor of Rear Admiral N. E. Mason, U.S.N., a distinguished Chief of Bureau of Ordnance in whose régime, in 1909, the first mine layer, the U.S.S. *Restless,* was commissioned. East of the quarters is a ravine, containing a spring of clear, bubbling, cool water, banked by cedars and filled with enormous beds of old-fashioned Virginia mint, a reminder of enchanting days of yore.

The Mine Depot-1927—Two months after the site of the Mine Depot was commandeered by the Government, the World War came to an end. The Navy Department, however, realizing a real need for an establishment of this nature, pursued the original plans, which resulted in the completion of the depot after six years of continuous labor. It is now a base for naval mine activity, an issue point for depth charges to counter the submarine, and is a depository for high explosives in bulk. The last Congress appropriated $580,000 for the further development and extension of the facilities here, which will consist of the building of 18 miles of new roads and the construction of 77 new buildings. The Government payroll at Yorktown amounts to one-third of a million dollars a year. This year Yorktown has been visited by a large number of vessels of the fleet on several different occasions, which suggests the fact that the Navy Department is considering this area more important from year to year.

Outside of its purely naval aspects it is a spot especially endowed by nature. Little wonder that so many of the first English settlers of Virginia selected this picturesque section of the country for their homes. Lucky and proud indeed is the Navy to find itself in possession of this property which is not only rich in beauty, history and romance but which ideally fulfills its naval mission.

THE MAIN LIBRARY, LOS ANGELES
One of the many beautiful buildings in Los Angeles.

International Newsreel

Courtesy of Los Angeles Chamber of Commerce

GENERAL VIEW OF LOS ANGELES 1908, B. P. (BEFORE PROHIBITION)
Note the sign in the foreground.

Note the sign in the foreground.

Courtesy of Los Angeles Chamber of Commerce

MODERN LOS ANGELES
Business district as it is today.

Courtesy of Lieutenant Commander R. Wainwright, U. S. N.

RIVERSIDE, CALIFORNIA, 1908

Officers and ladies at Riverside after inspecting the Orange Groves. Hats were an important part of the costumes in the decade immediately following the "Gay Nineties."

Courtesy of Mrs. Grace Stevenson

PASADENA, CALIFORNIA, 1908

Where all the roses in the world seemed to have been gathered to welcome the fleet.

International Newsreel

HOLLYWOOD, CALIFORNIA

When the fleet visited the coast in 1908 Hollywood was unheard of. Moving Pictures had just made their bow to the world and had not been received with much acclaim.

International Newsreel

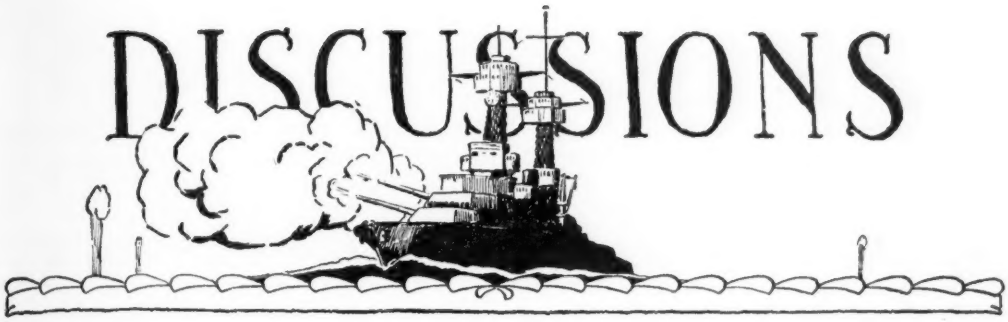
SANTA BARBARA, CALIFORNIA

The "Street in Spain," a picturesque spot in Santa Barbara.

International Newsreel

SANTA BARBARA MISSION
One of the historic spots in Santa Barbara, California.

DISCUSSIONS



Washington's Visits to Colonial Annapolis

(See page 90, February, 1928, PROCEEDINGS.)

DR. JOHN C. FITZPATRICK, EDITOR OF THE DIARIES OF GEORGE WASHINGTON.—Captain Baldridge's interesting and informative record of Washington's visits to Annapolis, in the February PROCEEDINGS OF THE INSTITUTE, is timely and valuable. Old Annapolis has many reasons to be proud of her past, but it is not pride that predominates in her recollections of the days when she entertained George Washington; rather it is the satisfaction with which one looks back on the honest friendliness of an old neighbor. There is enough and sufficient to show that Annapolis held a warm spot in the heart of Washington and that he undertook visits to her with well-nigh the same alacrity that he arranged for visiting Fredericksburg and Williamsburg, in Virginia. Judging from the surviving documentary evidence, Annapolis furnished Washington with many of his most enjoyable recreations and it is well known that his friends on the east side of the Potomac were ranked only by his nearer neighbors in Alexandria.

Captain Baldridge questions why, in view of the immense amount of material already in print about George Washington, more should be published. Try to answer this question and the reasons come in droves. I will give but two or three. The first is that the human interest in Washington is everlasting and it is not a manufactured interest but a real one. Foreigners, many of them with but limited acquaintance with English words, all know the name of Washington. The history of America may be vague and shadowy to them but even the inscrutable oriental countenance brightens at the sound of the name. Indeed it seems that most foreigners know our history mainly through George Washington and this active human interest will ever be capitalized by aspiring authors.

Another reason is that the story of Washington arouses enthusiasm in a certain type of mind, which is a type that will rush into print on the slightest excuse unless forcibly restrained. A third reason is that Washington presents a problem worthy of careful study and analysis which, from every viewpoint, repays the most critical labor. It is unnecessary to state that this last reason explains Captain Baldridge's article.

As the first President of the United States, under the present Constitution, in 1789, Washington, of course, became the commander-in-chief of the Navy as well as of the Army; but it may not come amiss to recall that as commander-in-chief of the Continental Army in 1775, George Washington established the first Navy of the United States. British supply ships and transports were on the way from England and Halifax to the beleaguered troops in Boston and the opportunities could not wait the slow movement of the Congress at Philadelphia. Massachusetts, New Hampshire, and Rhode Island privateers were already out and their prizes, while injuring the enemy, were not benefitting to any noticeable extent the restless militia besieging Boston. Washington commissioned seven vessels in 1775 and the first of the prizes taken by them was brought into Gloucester in the early part of September. Two of his vessels cruised as far east as Prince Edward Island, but the majority of them operated off the New England coast. To Stephen Moylan, one of Washington's aides, was entrusted general supervision of

One of the historic spots in Santa Barbara, California.

the various matters of management in this business of the infant navy, a business that was relinquished by Washington at the earliest practicable moment though in this, as in almost every phase of the Revolutionary War, one cannot investigate very far before he realizes that every angle of that war slants back, in one way or another to George Washington.

The Constitution, under which Washington became commander-in-chief of the Navy, is more closely linked with Annapolis than is usually remembered. The visit in December, 1784, which was to bring about an agreement between Virginia and Maryland in the matter of the Potomac navigation, brought about the so-called Alexandria Conference which adjourned to Mount Vernon, struggled, gave over the attempt, and issued the call for the Annapolis Convention, which in turn, called the Philadelphia Convention of 1787, which gave us our Constitution.

One of the many interesting points brought out by Captain Baldridge is the Daniel Wolstenholme acquaintance with Washington which is another one of the Maryland contacts about which it would be pleasant to know more. It is extremely satisfactory to have a concise and orderly arrangement of Washington's visits to Annapolis such as Captain Baldridge has given us and the exactitude of the local history he has developed is most valuable; the illustrations are well chosen and so well presented that only a personal visit to Annapolis could be more satisfying.

In the year 1772 Washington was disappointed in an intended visit to Annapolis before he finally went, in October, to the races. The September visit to the Reverend Jonathan Boucher did not extend to the Chesapeake and in May of this year Washington wrote a letter of explanation to Boucher when the intended visit had to be postponed. "I expected" he wrote, from Mount Vernon, "to have made you a visit soon after my return from Williamsburg and to have gone from thence to Annapolis, am a little uncertain now when it will be in my power to enjoy this pleasure; as I have business that will call me into Loudoun, Fauquier, and Berkeley sometime between the middle and last of this month; and am now engaged in fishing and other matters which seem, I think, to require my attention." The last phrase is delightful in its, perhaps, unconscious touch of irony. The fishing which "seemed" to require his attention, was the usual spring seine fishing whereby a sufficient supply of Potomac herring and other fish were caught and salted down for food for the servants at Mount Vernon. The diaries show that, unless Washington himself were present to oversee the seine haul, the matter was, more than likely, but indifferently attended to.

The visit of 1781 has the pleasant local color of the contemporary newspaper account from the *Maryland Gazette* and an added touch may be given by Washington's reply to the address then delivered to him, by the citizens of Annapolis, through the hands of Mayor John Bullen. The General's modesty is evident and it cannot be disputed that it was that of an honest and sincere nature. He wrote on November 21:

> I am obliged, by the polite and affectionate address of the citizens of Annapolis. Nothing can be more flattering to me than to know that my general conduct has met the approbation of my countrymen. It is the most grateful reward of those services which I have ever, in the course of my command endeavoured to render them, but which their too great partiality has often times over rated. That the State in general and this city in particular may long enjoy the benefits which they have a right to expect from their very spirited exertions in the prosecution of this just war is the sincere wish of Sir
>
> Your most obt & very
> humble Servt.
> GO: WASHINGTON

Washington did not visit Annapolis again until the war was over. After the British evacuated New York City, the commander-in-chief set out for the Continental Congress then sitting at Annapolis, to resign his commission. The visit was marked by a round of official and unofficial courtesies in which Washington was the central figure; but before he left Philadelphia, on his journey southward, the entries in his private expense account book show how naturally his thoughts, even then, were homing to Mount Vernon. In these expense items appear the Christmas gifts purchased for the Custis children. There were not many kinds of toys from which to choose, but the short list of those purchased is engaging. There was a fiddle, a gun, quadrill boxes, a whirl-a-gig, a cap and several children's books, the character of which we are left to guess. Washington arrived at Annapolis December 19 and the round of social ac-

tivities commenced the next day. On Monday, December 22, the mayor, alderman and Common Council of Annapolis delivered an address to him, to which he replied in not uninteresting words:

"If my conduct throughout the war has merited the confidence of my fellow citizens and has been instrumental in obtaining for my country the blessings of Peace and Freedom, I owe it to that Supreme Being who guides the hearts of all—who has so signally interposed his aid in every stage of the contest and who has been graciously pleased to bestow on me the greatest of earthly rewards—*the approbation and affection of a free people.*"

It is well to remember such a statement as this when Washington is accused of being indifferent to religion. Such an acknowledgement is not, of course, sufficiently orthodox to please many, but it is quite sufficiently positive to prove that George Washington, who knew only too well how precariously thin had been the ice at times on which the Revolution skated; who knew every one of the reasons why the Revolution should have failed, knew also, in his soul, that a power higher than man had pulled him through to victory.

Washington's last visit to Annapolis was in 1791, but there was one more later contact in 1793, when the citizens of the town, in a public meeting at the State House, September 5, addressed a letter to the President, then at Mount Vernon, outlining their sentiments on the Genet and Liberty excitement then sweeping over the country. After reciting the general situation the citizens recorded that:

They cannot be unmindful of the important advantages derived from our generous allies, the citizens of France, and they doubt not, that, throughout the United States, there prevails a disposition on all proper occasions to testify their gratitude and affection. But they never can consent to the adoption of a conduct which would violate the rules of universal justice, exceed greatly the extent of our national engagements and hazard the blessings we have acquired, in serving materially the cause of our friends.

Alexander Contee Hanson, an old aide-de-camp of Washington, signed this in behalf of the citizens. On September 18, Washington replied that he was highly pleased with the approbation of his conduct by his fellow countrymen in general "and none have given me more pleasure than receiving that of the citizens of Annapolis."

Some Aspects of the Present Pay Bill

(See p. 1267, December, 1927, PROCEEDINGS)

By LIEUTENANT PHILIP LEMLER *(CC) U.S.N.*—Lieutenant Commander Bowden, in his article "Some Aspects of the Present Pay Bill," presents the case of the bachelor officer against the "Pay Bill of 1922" adequately. After skilfully analyzing the bill and illustrating a few of its monstrous results, he arrives at the general conclusion " . . . our modest remuneration should be for naval duty performed and responsibility assumed which was to march side by side with rank and *length* of *service.*"

The pay bill of 1922 is based in large part on "length of service" and with that in mind, by examining the pay schedule provided by the bill, one easily sees that here is another "aspect"—one that is quite as vital to the "youngest group" of the Navy as the "no-dependent" aspect is to the "bachelor group."

Length of service for pay purposes is sometimes reckoned from the day "when that right hand went up . . . ."; other times it is figured from the date of original commission. The midshipman who became one by raising his right hand prior to 1913 has his naval service figured from that date, while he who was sworn in in 1913 or subsequently, has his naval service figured as starting on the day he accepted his first commission—some four years later. Thus an officer, classs 1916, has his four Naval Academy years counted as "service" while an officer, class 1916, has his four Naval Academy years counted as a function of service which Congress equated to zero. Whether one method of service years compensation is justifiable and the other is not is beside this question. The first, however, remains.

The class of 1916 man and the class of 1917 man, it must be agreed will have simultaneously duties and responsibilities of equal importance during their naval careers. Now take two married officers as examples, one from each class, and pass on to the thirtieth anniversary of their several graduations. Assume each will have reached the rank of captain. In retrospect, here is what one finds they were paid *in toto* under the provisions of a "length of service" pay bill, taking the 1922 edition as our basis.

Class Officer	*Legal "Length of Service"*	**Commissioned Service*	*Total Pay and Allowances*
1916	34	30	$160,101
1917	30	30	149,821
Difference.....			$ 10,280

* Service divided as follows: Ensign, three years; Lieutenant (j.g.), three years; Lieutenant, seven years; Lieutenant Commander, eight years; Commander, eight years; Captain, one year.

The last column speaks for itself. If the 1916 man took out a thirty-year endowment policy when he graduated and paid his premiums with the pay he received in excess of the 1917 man, he would receive, after thirty years' commissioned service, a paid up policy worth approximately $18,600. This figure, rather than the difference in the table, is an indication of how much the four years Naval Academy Service is worth to him in dollars and cents.

Two specific examples of how ridiculous this particular discrimination in length of service may be, follow:

1. A 1916 man graduated with his class but failed to pass his promotion examinations and was accordingly set back to a position junior to a 1917 man. Both men will be at sea in 1929 as lieutenant commanders. At that time their yearly pay and allowances, under a bill based in whole or in part on length of service, such as the 1922 Bill, will be:

Junior 1916—seventeen years—no dependents—$3,916 per year.

Senior 1917—twelve years—no dependents—$3,099 per year.

The junior receives $817 more annually than his senior.

Actually the 1916 man is also married and he will, in fact, draw 84 per cent more pay than his senior, the bachelor 1917 man.

2. In the second case, a 1916 holdover to 1918 will carry with him, under a pay bill based in whole or in part on length of service, an advantage of five years and two months service over his classmates. Figure that out!

And that same effect carries through all the way down.

Until recently, enlisted service counted in the "length of service" reckoning. The withdrawal of that "privilege" is not retroactive. The results of that "privilege" are well known, but I can't withhold one example. It really is a classic!

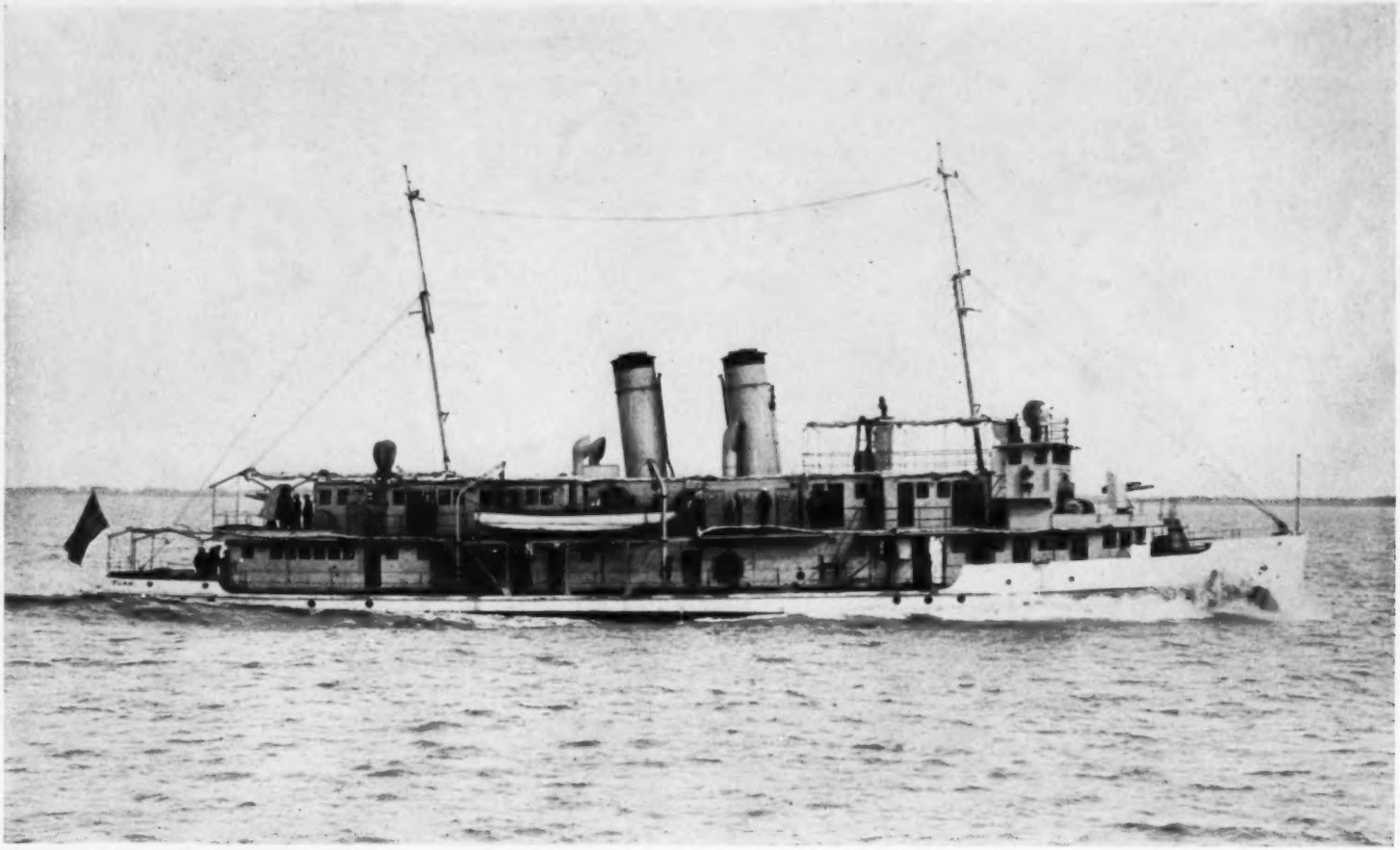
A boy tried to get a Congressional appointment to the Academy. Failing, he enlisted in the Navy at the Great Lakes Training Station—rate Sea 2c—and announced his candidacy for an enlisted appointment. He was sent to the Station Preparatory School, took the examination, passed, was appointed and duly entered. His total enlisted period was one year, all of which was spent in "prepping" for the Academy. That year counts in his longevity and due to total extra year, in thirty years' commissioned service he will have received $3,413 more than his classmates. Therefore, for one year's "service" as an enlisted man at Great Lakes Training Station, the Government will pay him $3,413 plus $30 per month for twelve months (enlisted pay) or a total of $3,773. If he bought a thirty-year endowment when he graduated, paying his premiums from this money, he would have, after thirty years' commissioned service, a paid-up policy with approximately $7,000. Quite some pay for one year's service as Sea 2c!

It is not difficult, then, to see that Lieutenant Commander Bowden missed a rather important aspect. However, that omission is most easily understood, for, by some token of human frailty which prompts the married officer to lend a sympathetic ear to the woes of the bachelor, along with a "don't touch me—I'm all fixed" glance, the officer who entered the Naval Academy prior to 1913 has well wishes and nothing else for those who followed him. So, in drawing his general conclusions quoted above, the author is not consistent with his demand for a pay bill which is at once fair and non-discriminatory to all. Had he considered this "length of service" wrinkle, I am sure he would have arrived at the conclusion that a pay bill fair to the most and discriminatory to the least should be based solely on rank and length of *service in grade*.

"LOS ANGELES" LANDING ON DECK OF U.S.S. "SARATOGA"

The *Los Angeles* and *Saratoga* demonstrated the possibility of lighter-than-air craft fueling at sea.

Navy Department Official Photo



Navy Recruiting Bureau, New York

U.S.S. "GUAM" OF THE YANGTZE PATROL

One of the six river gunboats being built by the Kiangnan Dock and Engineering Works, Shanghai, China. The *Guam* is first to be finished, has successfully undergone her acceptance trials, and has recently reached Chungking at the head of the Yangtze Gorges. The others are the *Tutuila*, *Luzon*, *Mindanao*, *Oahu* and *Panay*.

PROFESSIONAL NOTES

2 February to 3 March

Compiled By

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and

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ner acceptance trials, and has recently reached Chungking at the head of the Yangtze Gorges. The others are the *Tutuila, Luzon, Mindanao, Oahu* and *Panay*.

UNITED STATES

New Naval Bomb

The Engineer, January 20.—According to the naval correspondent of a London daily newspaper, the United States Navy Department is now in possession of a new type of aircraft bomb, tests of which are said to have proved conclusively the futility of battleships in warfare. The new agent of destruction is described as a "diving bomb." On falling into the water, it seems, the bomb does not explode until it has sunk to a depth of twenty to thirty feet, and therefore it acts as a mine or depth charge against the unarmored bottom of a ship. The first bomb of this description is stated to have been made at Frankford Arsenal, Philadelphia, seven years ago, but the design has recently been much improved. As now made, the bomb weighs 4,300 pounds, and has a length of fourteen feet and a diameter of two feet. It contains a charge of 2,000 pounds of T.N.T., or about four times the amount of high explosive contained in the largest naval mines or torpedoes of today. Airplanes carrying one of these bombs are said to have reached a height of 8,000 feet. When dropped from 4,000 feet against a land target, one of the bombs blew a crater in the ground measuring sixty-five feet across and nineteen feet deep, and displacing 1,046 cubic yards of earth. These figures are said to have good authority behind them. Their most striking feature is the implied weight of the shell, 2,300 pounds. The density of T.N.T. varies from 1.3 to 1.7, according as it is in the powder or cast form. Accordingly, 2,000 pounds of the explosive should occupy from 24.6 to 19 cubic feet. If the bomb is a plain cylinder, its dimensions imply that it has a total volume of about forty-four cubic feet. The net volume of the shell is therefore between 19.4 and 25 cubic feet. As it weighs 2,300 pounds, the specific gravity of the material of which it is constructed lies between 1.88 and 1.44. These figures preclude the possibility of the shell being made of aluminum, but they strongly suggest that the metal employed is electron, the specific gravity of which is 1.78. If the metal used is electron, it would appear that the walls of the shell are about three inches thick.

GREAT BRITAIN

Fifth Airplane Carrier Commissioned

New York *Times,* February 19.—The British aircraft carrier *Courageous* will be put into commission at Davenport on Tuesday for duty with the Naval Air Service. She will be the fifth large vessel of her kind to be added to the fleet. When her sister ship, the *Glorious,* now being converted, is finished soon the navy will have its full complement of half a dozen large aircraft carriers. All three of these "hush, hush" cruisers—*Courageous, Furious,* and *Glorious,* built by Admiral Fisher during the war —will then have become floating aërodromes.

Each has a flying deck spreading over the whole ship, from which aircraft of all types except seaplanes can rise and on which they can descend. Each accommodates several flights of machines. The cost of construction for the *Courageous* and the additional cost of her conversion totals $20,000,000.

There has always been a certain amount of jealousy between the Admiralty and the Naval Air arm. The Admiralty first tried to absorb the Naval Air branch, but failed. Seventy per cent of the officers have been trained as airmen. Both battleships and cruisers now carry airplanes and, generally, catapults with which to launch them.

From these facts it is deduced that the Admiralty, having been forced to admit the great importance of aircraft in naval operations, is seeking to attain their control by indirect methods.

The Singapore Naval Base

New York *Times,* February 19.—Builders have just finished the 50,000-ton floating dock which the Admiralty ordered for the Singapore naval base. Early in the summer, probably about May, when the dock's electric installation has been completed and its sinking and lifting capacities have been tested, it is to be towed out of the Tyne in two sections and turned southward toward the Straits of Dover on its 8,500-mile journey to Singapore. Meanwhile, its site at Singapore is far from ready. At present it has not even attained the status of a hole in the ground. It is still a Malayan swamp into which a lone dredger is slowly chewing its way.

When the dock reaches Singapore sometime in the fall it will be towed "up a

creek," as the naval expression goes, and left there. A dredger and four hopper barges are at work preparing its site in the jungle, which will be the only part of the naval base proper that will be ready. Three miles away from the main base and divided from it by the Sabawang River, the airdrome is already nearing completion. Five-sixths of its 600-acre area was cleared and the two hangars and slipways were finished by February 1 to accommodate the four big seaplanes which left Plymouth for Australia last year and on their return from Australia are to be based permanently at Singapore. But, except the airdrome and the site for the floating dock the Singapore naval base will still have a paper existence next fall. All the work thus far started is little more than the prologue to the gigantic engineering feat of the base itself.

It requires the imagination of a real estate agent to picture the base as it will eventually be, with its huge oil depot containing six months' supplies for the fleet, its armament depot, its graving dock and its floating dock, each capable of accommodating the biggest battleship afloat; its workshops, its slipways, its wireless station in constant touch with London; its airdrome and its town of European bungalows and barracks for the population which will ultimately take root there. It requires much more than the imagination of any real estate agent to picture the ultimate effect of this projected Gibraltar of the East on the problems of the Pacific.

At present the nearest fully equipped base for the British fleet is Malta, in the Mediterranean, about 6,000 miles away. The perhaps more vital naval station of Hongkong is 1,500 miles to the north, but it lies within the sphere defined by the Washington agreement, and its further development is therefore impossible. The distances are so great that to talk of defending Australia from Singapore is a little like talking of the defense of England from Cape Town, but the Singapore project has nevertheless been voted by Britain and the dominions. Once a mere geographical expression, Singapore is acquiring new meaning in the British mind.

The projected base is not in Singapore itself, but about fourteen miles away on the other side of Singapore Island. There are a naval coaling station and depot in Singapore harbor, and further batteries and forts have been installed there since the war, but the new base is to be tucked away up the old strait which cuts off Singapore Island from the Malayan mainland. At its narrowest point the old strait was only half a mile wide, but it was closed five years ago by the causeway which carries the railway from Singapore city to the mainland towns. The old strait has never been used by big ships. The main route from the Mediterranean to the Far East lies through the Straits of Malacca and the Singapore Strait off the outer side of Singapore Island, and so into the China Sea.

The site of the projected naval base lies east of the causeway on the old strait. Here the strait is something over a mile wide, but so shallow that dredgers will have to bring the sea inland before battleships will be able to reach their projected base. All this side of Singapore Island consists of pulpy marshland with wandering streams everywhere. There is a small hamlet at the island end of the causeway, but with that exception there is no town anywhere on the island except Singapore itself. Back from its shores much of the island is under cultivation, but along its shores there has hitherto been nothing but jungle and swamp, steamy and hot but hardly as dark and impenetrable as is usually supposed.

At present all that exists of Britain's Eastern Gibraltar is a huge and expanding open space. Standing in the middle of it today the sea cannot be seen, and an optimist with the vision of an Old Testament prophet points out where the new seawall is to be built along the entire front of the base, but all that can be seen now is an interminable stretch of more or less dry land. The entire face of nature will have to be changed. The sea will have to be brought inland up the old strait, one of the rivers which at present wander aimlessly into the strait will have to be diverted to a new channel, the whole area will have to be networked with roads and railways—and then the gigantic engineering feat of the great base itself, a ten years' job, will begin!

As for fortifications, these not only do not exist at present but they are not even referred to except in discreet whispers, for Australians and New Zealanders, whose Governments have contributed to the scheme, have been known to become visibly worried at the discovery that a naval base

means 15-inch coast defense guns as well as docks. But among the engineers on the spot there is perhaps less interest in these outside matters than in the immediate matter of getting the Sabawang River bridged to connect the naval base and the airdrome, and there is certainly less interest in bridging the river than in draining the main clearing and getting rid of the omnipresent mud.

CHILE

The New Chilean Destroyers

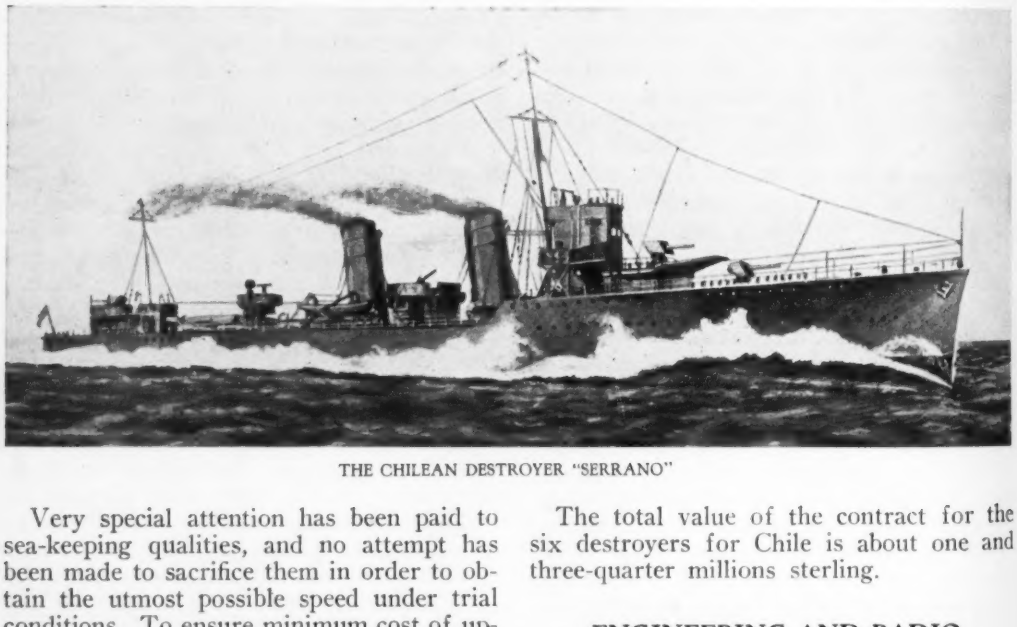
The Shipbuilder, February.—The general features of the new Chilean destroyers, which have been designed by Messrs. John I. Thornycroft & Co., Ltd., and are sister vessels, will be seen from the accompanying drawing. The following are the leading particulars:—

Length overall	300 ft. 0 in.
Beam	29 ft. 0 in.
Maximum draught (about)	12 ft. 8 in.
Displacement fully loaded, tons (about)	1,430
Shaft horse-power	30,000
Contract speed, knots	35

The main armament consists of three 4.7-inch quick-firing guns, as well as six 21-inch torpedo tubes, arranged in two groups of three each. There is also a powerful anti-aircraft and anti-submarine armament.

The vessels are each propelled by twin screws, driven by compound steam turbines (the high-pressure elements being of the Brown-Curtis and the low-pressure elements of the Parsons type) through Parsons single-reduction gearing. Geared cruising turbines are also installed for low speeds. The general arrangement of the machinery is very similar to that of the *Amazon,* which was recently built by Messrs. Thornycroft for the British Government and which proved a highly successful destroyer.

Steam is supplied by three Thornycroft water-tube boilers, with seamless cylindrical lower barrels, and fired by Thornycroft oil-fuel gear. The steam pressure is 250 pounds per square inch, and no superheat is employed.



THE CHILEAN DESTROYER "SERRANO"

Very special attention has been paid to sea-keeping qualities, and no attempt has been made to sacrifice them in order to obtain the utmost possible speed under trial conditions. To ensure minimum cost of upkeep and long life of the vessels, the shell plating is all galvanized; and heavy scantlings have been adopted in the hull generally, so that the stresses in the various parts of the structure will be even less than those allowed by the British Admiralty in the same class of vessel.

The total value of the contract for the six destroyers for Chile is about one and three-quarter millions sterling.

ENGINEERING AND RADIO

Invisible Searchlight Ray

New York *Times,* February 12.—The night sky above New York is soon to be swept by an invisible searchlight that shows on a screen everything on which its rays fall.

Arrangements are being made by Captain O. G. Hutchinson, managing director of the Baird Television Development Company of London, to install the invisible ray apparatus on one of the city's skyscrapers, it was announced last night by The Associated Press.

Captain Hutchinson is arranging to have airplanes circle over the city to serve as targets for the searchlight. First an ordinary searchlight will be thrown on them, making them visible to watchers on the ground. Then the invisible ray will be substituted for the visible one and the planes will disappear in the darkness. Although they will continue to be shown on a screen attached to the searchlight, the pilots will be unaware that they are under observation when they are in the line of the invisible searchlight.

Baird's invisible ray works on the following principle: A screen is put in front of the ray of a regular searchlight which filters out all light waves except the infra-red rays. These are the rays beyond the lower end of the spectrum and are invisible to the human eye but not to a faster "electric eye."

The filtered beam pierces fog and clouds and everything in its path is recorded in the electric eye of the Baird invention and then magnified on a screen for all to see.

The invisible ray was invented by John L. Baird in England more than a year ago, and at the time was hailed as an invention which might revolutionize methods of warfare because of its potential use in anti-aircraft work. Shortly after the invention was announced all news about it stopped and there were reports that the British War Office had ended further information so that the secret might be kept for England alone.

Captain Hutchinson said today, however, that there is no War Office ban on demonstration of the machine and that it will be shown here, probably shortly after Mr. Baird himself arrives on a visit to America next month.

New Submarine Antenna

Baltimore *Sun*, February 19.—To keep the radio on submarines in constant operation in all kinds of weather, navy engineers are working on the problem of stormproof antenna.

The antenna, which at the ends of the submarine is only fifteen feet above the water of a calm sea, is an easy target for the onslaught of gales and the wash of heavy seas when the boat is cruising on the surface. Often it is washed away or grounded, stopping transmission.

As a support to the loop antenna, lead-in wires made of corrosive-resisting steel and galvanized steel are being installed on submarines. These lines are displacing bronze wires which had the disadvantage of stretching.

Single-section radio masts or towers are replacing the old telescopic masts, which bend under a heavy wind. The new masts, made of hollow copper and steel, are pulled down into the hatch when the boat submerges.

Another menace to submarine radio is the breaking of the antenna by logs, seaweed, and other marine growths, which become entangled in the wires when the boat speeds under the surface.

The antenna is heavily insulated with rubber and canvas to make it water tight and pressure tight. The circuit of the loop or coil antenna, which is the type used on submarines, is completed by being grounded to the boat.

Diesel Engines for Naval Service

Engineering, January 20.—In his paper on "Diesel Engines for the Navy" Mr. Edward C. Magdeburger divided the consideration of the subject into two parts—main propulsion and auxiliary power. For submarine propulsion, engines varying in power from 120 brake horsepower to a total of 7,000 brake horsepower were in use. They were mostly of the four-stroke type, but there were many two-stroke engines, and the largest individual engines were of about equal power. They were the Busch-Sulzer two-stroke six-cylinder engine of 2,500 brake horsepower running at 325 r.p.m., and the Bureau type of four-stroke engine with ten cylinders giving 2,350 brake horsepower at 345 r.p.m. Auxiliary naval ships, such as transports, oil carriers, repair and depot ships, did not differ much from the ordinary merchant vessel, but were operated for a much smaller time. The difference in cruising radius, and in the amount of oil a tanker could carry, gave the Diesel-propelled vessel an advantage over the steamer,

which could not be lightly disregarded in time of national emergency. No navy in the world employed oil engines for the propulsion of cruisers and capital ships, with the possible exception of the British cruiser-minelayer *Adventure,* which, in addition to its 40,000 h.p. steam plant, driving it at 27¾ knots, had a Diesel plant for cruising at moderate speeds. Had the European War not ended in 1918, the German Navy would have had oil engines of 12,000 h.p. installed to drive the wing screws of some of their new cruisers, to increase their cruising radius and enable them to operate for long periods without touching port. Though two of these engines completed their shop tests successfully, they were never put into service, and were destroyed by order of the Allied Commission. The building of an 11,000-ton battleship equipped with Diesel engines was under consideration in Germany, and the recently built cruiser *Königsberg* was reported to have Diesel engines for cruising, in addition to a 65,000 h.p. steam-turbine installation.

Excessive wear due to continuous running, and fuel consumption at partial loads, mitigate against the use of direct-coupled oil engines for driving high-speed naval vessels of any considerable size. Even in the larger submarines, such as the British X-1 and the American V class, an indirect drive by means of electric motors was employed to obtain reasonable fuel consumption and reduce the wear of the engines. Although multi-cylinder engines had been constructed to satisfy any condition of power when directly coupled to the propeller shaft, their height could hardly be regarded as satisfactory to go under the protective deck of a naval vessel. This was a further reason why high-powered naval vessels could not use directly-coupled oil engines. High-speed engines, built but not completed in time for installation in German submarines, had now been utilized in association with gear drives with success, a scheme resulting in the outstanding advantages of low headroom of the engine room and light weight of engine. Hydraulic coupling had also been employed, particularly to separate the disturbing periodic forces of the oil engine from the gear drive and the propeller shaft. The original proposals of the Vulcan Company embodied the use of the Föttinger transformer for reversing, but in the latest installation, the *Wulsty Castle,* the Beardmore-Tosi engines were made reversible, and only one hydraulic coupling was used between the engine and the pinion. The Hamburg-American Line had ordered a vessel for their Atlantic service of 12,100 shaft horsepower, in which the Vulcan gear was to be fitted, and also a similar vessel with the direct-coupled Frahm gear of the Blohm and Voss Company. The Vulcan system had this advantage, that it permitted the use of several engines, which could be coupled hydraulically to give the required speed, a sufficient number being used to keep them about fully loaded, thus saving the remainder from wear, and also effecting an economy in fuel. There seemed to be no reason why the advantages of electric transmission could not be realized with the use of oil engines. Considering auxiliary purposes, Diesel engines could be used for electric generation with a much lower fuel consumption than steam turbines. Their installation also permitted fuel savings, by the utilization of exhaust-heated boilers for the distillation of water and for low-pressure steam circuits.

AVIATION

Aircraft Propellers

BY LIEUTENANT COMMANDER C. H. HAVILL, *U.S.N., Bureau of Aëronautics.*—Before the first successful flight of the Wright Brothers in 1903, various mathematicians speculated on the proposition that an air propeller was analogous to marine propellers. There were two schools of thought at that time, one of which claimed that if proper corrections were made for the difference of density between air and water that marine practice in propeller design would apply equally well to air propellers; the other school of thought maintained that air being compressible, and having less density, and being subject to thermodynamic changes made it necessary that an entirely new theory of propeller design be produced. The air propeller first used by the Wright Brothers in 1903 followed closely the marine theory but was modified to some extent to fit the then existing aërofoil theory. It was made of a light frame covered with canvas.

From this humble beginning the air propellers of the next six years were made largely on the system of trial and error. Meanwhile a Polish scientist named Drzewiecki was developing the theory that any

one cross section of a propeller blade could be considered as an aërofoil section operating under certain conditions of air flow and that the summation of the effect of each section along the blade would give the total effect. On tests of various models it was found that his theory did not always fit the case, that there were still some unknown variables that entered into the performance. From considerations of these results an alternative propeller theory was put forward by R. E. Froude, famous for his research work on marine models in the towing basin in England. This theory assumes that the propeller is replaced by the equivalent to a special kind of disc moving at a velocity V relative to the air and having some device for imparting an acceleration to the air passing through the propeller disc. Then considering the mass of air being moved it was deduced that thrust equals rate of change of momentum. This alternative theory has been called the "momentum theory."

Thus, there existed in 1906, two logical theories explaining just how a propeller acts, the Drzewiecki or blade element theory and the momentum theory. In this connection credit is to be given to Mr. Lanchester for independently expounding the blade element theory in his *Aërodynamics* published in 1907 as Drzewiecki's work was not published until 1909. Further tests on actual propellers and models showed that neither of these theories exactly fitted the case, so an attempt was made to combine them so that theory would fit the test results. In combining these theories it was found that both were fundamentally sound but that the assumptions on which each were based did not accord with actual conditions. It was found that the air acquired an increase of velocity ahead of the propeller which is known as the inflow velocity, that further the outflow velocity was not uniform over the propeller disc and that a certain rotational velocity was given to the slipstream. With these modifications of translational and rotational inflow velocities applied to the "Blade Element Theory," a method for designing an aircraft propeller was developed which is the one in use today. The problem of actual design, however, is not so simple as it appears as experience and engineering judgment must be used to properly qualify the blade element method.

During the war a large amount of air propeller designing was done by trial and error. The method in use at that time was to design three or four wooden propellers for a particular new airplane and to put into quantity production the propeller which gave the best performance for that type of aircraft. The net results of these best propellers were analyzed, curves were plotted and the empirical constants obtained for making the correct assumptions for use of the blade element theory. These results, from an English point of view, are elaborately given in *The Design of Screw Propellers* by Henry C. Watts, published in 1920. The methods described by Henry C. Watts did not meet the full requirements of the American propeller designer. The American designers preferred to view the complete propeller whenever possible and use non-dimensional coefficients of performance in order to predict the performance.

In order to satisfy the demands for these coefficients, experimental research on air propellers was conducted by the National Advisory Committee for Aëronautics, by W. F. Durand and E. P. Lesley. The results of their model tests on various families of propellers appear in N.A.C.A. reports and the coefficients for performance were published in 1925 N.A.C.A. Report No. 141. The results of this research are extremely useful but the fact that test coefficients apply to only goemetrically similar propellers constitutes a strict limitation to the use of such coefficients. It must be realized also that coefficients based on model tests are not applicable to full scale propellers unless corrections are made to compensate for differences in tip speed and for fuselage interference which are not included in the model coefficients. In addition to this it must be realized that these models generally used the thick aërofoil sections used in the design of wooden propellers and that often the results do not agree with actual full flight test of the thin sectioned metal propeller in use today. The National Advisory Committee for Aëronautics has just completed a large wind tunnel at Langley Field, Virginia, for the purpose of testing full sized propellers with the full sized fuselage and engine behind them. It is felt that this wind tunnel will give test results that can be applied directly to modern usage, yet there are so many variables that enter into aircraft propeller design that it is believed that considerable experience and engineering

judgment must be used to know when and where various test data can be applied.

The Bureau of Aëronautics of the U. S. Navy designs and tests many experimental propellers each year. The purpose of these tests is to improve plane performance where possible; reduce fuel consumption and to lower propeller manufacturing costs. Both the Army and Navy design practically all of their own propellers, furnishing the contractor with a finished drawing with all demensions. This method places the responsibility for the propeller performance squarely up to the Services, yet most airplane manufacturers prefer to have it this way, believing that one or two sources of propeller design based on the performance of many different types of planes and engines give the best results in the long run.

Let us now in general terms describe the problems that are involved in aircraft propeller design. A rotating propeller offers a definite resistance to being rotated, and this resistance varies as a function of the speed of revolution. The power absorbed varies proportionally. The speed of revolution of any particular propeller will, therefore, be determined to a large extent by the power available to turn it. On the other hand each different type of engine develops its power most efficiently at some definite speed of revolution, depending on the type of engine. The propeller, in order to be considered a practical success, must be so designed that the torque caused by its resistance at this speed just equals the torque which the engine can exert to turn it. If the torque required by the propeller be either greater or less than the torque available the propeller will turn slower or faster respectively until the necessary equality of torque is obtained. If this were all, the problem would be simple, but account must be taken of the fact that power required to turn the propeller depends not only on the speed of revolution but on the airspeed of the craft on which it is used. In other words, each combination of engine and aircraft will require its own particular design or changes made to already existing designs in order that the engine will have the desired speed of rotation when operated at the speed of the aircraft.

Now, independently of this foregoing requirement any given propeller has its maximum efficiency at a given ratio of air speed of the plane to tip speed of the propeller. It, therefore, is required that when the engine has its required r.p.m. when the plane is moving forward at its resultant speed that the propeller shall be operating under the conditions that cause its maximum efficiency. For planes that cruise at lower than maximum speed it is desirable that the propeller maximum efficiency occurs at cruising speed in order that fuel consumption will be low. In high speed fighting planes it is desirable to have maximum efficiency at the maximum speed. So it is seen that the type of service required from a plane governs to some extent the propeller used.

In addition to the previous requirements that the propeller must fit the engine and plane and have as high an efficiency as can be attained, it must be safe and reliable against structural failures. The propeller in being rotated, is subject to severe stress due to centrifugal force, upon which stress is superimposed the bending moment due to the thrust which acts similar to a load on a cantilever beam. These two main stresses are further complicated in that there is a torsional stress in the blade due to the fact that the center of pressure and the center of gravity of any one section are not the same point. Other causes of stress in a propeller blade are bending moment due to torque and gyroscopic stresses.

In order to provide enough material to withstand these stresses the propeller designer is confronted with the problem that increase of cross sectional area or moment of inertia alone is not sufficient, for centrifugal force is increased by the addition of material. The distribution of material in a propeller blade such that each section will be aërodynamically as good as possible yet still have sufficient material properly distributed to make it sufficiently strong is the eternal problem in propeller design. Until about 1923 nearly all propellers were made of wood. Up until that time the proper wood, properly put together, was the best material available. The suitability of a material for propeller manufacture depends largely on the strength/density ratio, and various experiments using different materials were tried. The most promising experiments prior to 1923 were: the use of a steel covering over a wooden interior; and later, the use of aluminum and aluminum alloys. Hollow steel blades welded along the trailing edges

showed promise but trouble with the weld together with the cost of manufacture failed to get this method into quantity production. However, "Micarta," a phenol product used as insulators, proved successful and is used today for certain types of propellers. In 1923 the first "Reed" slab type of propeller came into use. It was made of a slab of rolled aluminum alloy and then twisted to the desired pitch. This type was later changed, for reasons of strength, to the Reed "R" type which somewhat resembles a wooden propeller reproduced in metal.

Until about 1924 all aircraft propellers were of the fixed pitch type. That is, it was impossible except in a specially equipped shop to change the angles of the blade to fit new conditions of airspeed or revolutions per minute. The detachable blade type was the result of this restriction. This type consists of a steel hub into which are fitted the duralumin blades. The blades can be set on a plane table to any angle desired. From a standpoint of performance and cost this type has come into wide use in the Army, Navy, and commercial fields. A given design of blade will fit a larger number of conditions of flight and hence dies can be made for those blades greatly in demand, which reduces their cost. The blades are of aluminum alloy produced under the trade name of "25S." This material has a high strength density ratio, can be forged and heat treated.

The advantages of the detachable blade type of propeller are numerous and mainly that the same design of blade used in two and three blade combinations, together with small changes in diameter give virtually several families of propellers. Experience shows that if a detachable blade is designed of uniform pitch but is set in the hub to operate at a lower effective pitch that the performance is bettered. In effect the lower setting gives a propeller of non-uniform pitch, so it is a case of the pitch all along the blade fitting the actual air flow that exists. In this respect, non-uniform pitch blades, when used with the modern air-cooled engines give better results than a uniform pitch. However, for best results the setting cannot be too far above or below the designed angle as in the extreme cases some sections would be working at either too high an angle of attack while at the other extreme some sections might have negative angles of attack.

Further advantage can be taken of the adjustable pitch feature in that a better climb and take off can be attained by reducing the setting about one or two degrees from normal. The propeller, for example, is set to have its maximum efficiency at the maximum speed of the plane. This setting in this example will be called the normal setting. Now if this setting is reduced prior to take off it will permit the propeller to turn faster or "race" at full throttle. This is a dangerous practice unless the limiting r.p.m. of engine and propeller are known. However, this is often done to get off with a heavy load and then throttling down when in the air.

Another advantage of the adjustable pitch type is that in an emergency due to shortage of propeller blades, the plane can be kept in the air by using a larger diameter blade and cutting it off to the correct diameter and setting it so as to give the required r.p.m. It is not maintained that this gives the best propeller possible but it is often resorted to instead of keeping the plane in the hangar waiting for the arrival of the correct blade.

Some research on the effect of high tip speeds on propeller performance was conducted by Dr. Stanton at the National Physical Laboratory in England during 1926 and 1927. Tests were carried out on aërofoil sections at air speeds up to twice the velocity of sound. (The velocity of sound in air normally is from 1,080 to 1,125 feet per second, depending on the temperature.) From the preliminary work it appears that the shape of the most efficient aërofoil section for use at such speeds differs considerably from that suitable for the ordinary range of tip speeds—that is, speeds below 1,080 feet per second. Following this preliminary investigation, studies of model propellers (using R.A.F. 31A section) operating at various tip speeds was begun. The results of these tests show that the loss of propeller efficiency begins to occur at a tip speed of about 760 feet per second and this loss is not serious until a speed of 850 feet per second is reached. Beyond tip speeds of 850 feet per second there is a more rapid decline in propeller efficiency and this loss is greater on propellers with thick sections than those with thin sections.

It can be seen from the contents of the preceding paragraph that in cases where the tip speed is too high, either a three or

four-bladed propeller with the resultant smaller diameter, or gearing down the propeller must be resorted to in order to obtain the best results.

With the development in the last few years toward increasing engine horsepowers and speed of rotation, it is practically imperative that propellers be made of metal and that gearing will become more and more necessary as this development continues. With competition so keen in the commercial field of aviation and the demands for increased performance in the military branches of aviation, it is more and more important that the propeller operate at its highest efficiency yet still be safe and reliable, and at the same time be of such construction to permit of manufacture in quantity production at as low a cost as possible consistent with quality of the product.

The aim in all propeller design should be safety, high performance, and economy which closely coincide with the general aim of all aircraft products.

Radio Direction Finders

By LIEUTENANT ALLEN I. PRICE, *U.S.N., Bureau of Aeronautics.*—There are three general methods in use and under development at the present time for determining the position of aircraft by radio. These methods include (a) radio compasses installed at shore stations or on board ships, (b) radio compass or fixed compass loop installed in the aircraft and (c) radio beacons installed along airways and at terminal airdromes. Each method has its advantages and limitations but only those which concern their application to naval aviation will be discussed here.

The (a) method has been used considerably in the past and will continue to be used more in the future as the operation of aircraft from surface ships increases. It is necessary for aircraft using this system to carry both a transmitter and a receiver which most naval aircraft do. The aircraft desiring a bearing makes the customary signals and the ship or shore station after taking the bearing transmits same to the aircraft. In case the aircraft wishes to arrive at the station taking the bearing, it flies a course which is the reciprocal of the transmitted bearing.

This is the system preferred and in use on a number of the European airways. The disadvantages are that that one compass station or group can only take bearings of one aircraft unit at a time, which, in some cases, might cause embarrassing delay in thick weather. It also requires the carrying of a transmitter which might be objectionable under some circumstances, and does not provide for an aircraft taking bearings of other vessels.

There are two different installations possible under the (b) method. One provides for a single or double athwartship fixed loop built into the wings of the plane. The transmitting station being received is used as a radio beacon and while the aircraft is headed in its direction or directly away and is at some distance, no signal is received in the pilot's headphones when he is exactly on the proper heading. When the plane is swung to the right or left of this heading, the signal is heard and increases in volume to a maximum when the course is ninety degrees to the right or left of the exact heading. The disadvantage of this installation is that it requires a pilot to deviate from his course (unless the course coincides with the heading of the transmitting station) while he takes the bearing and steadies on it a sufficient time to be assured of its accuracy.

The other installation provides for one fixed fore and aft and one or two athwartship compass loops built into the plane. The aircraft maintains its course and the radio operator balances the incoming signals in the fore and aft coil against those in the athwartship coil(s) by means of a goniometer and reads therefrom the bearing of the station. This enables the most experienced radio man in the crew to operate the equipment and does not put additional duties on the pilot at a time when possibly his entire attention should be used in piloting his aircraft.

When wood was used as the principal material in the construction of flying boats, a rotatable radio compass was employed similar (but smaller) to that used in ship and shore installations, but with the advent of metal construction, it was necessary to adopt one of the installations mentioned above. The rotatable loop is still very efficient, however, in lighter-than-air aircraft.

In this method it is possible to take bearings of other craft, but necessitates the carrier breaking radio silence for a sufficient time for the taking of bearings by its aircraft in order to assist their return.

The (c) method has been adopted and is being developed by the Army and the Department of Commerce for use on airways established by them and is of use to Naval aircraft flying along such airways, but this system has no application aboard ship due to the extensive antenna system necessary for obtaining sufficient range to be effective. To date the only frequencies which it has been found possible to utilize are those in the intermediate frequency band. High frequencies have been tried but the action of the beacon has been found to be very erratic, when using them. While the radio beacon is excellent on a straight airway, as it only necessitates the carrying of a small receiver by an aircraft and requires practically no radio knowledge by the pilot, it is not useful on an airway that is curving or otherwise irregular. Interference may also be caused between beacons, as the airways throughout the country increase causing an increase in the number of beacons established on such air routes. Beacons at coastal stations in time of war will prove very useful in aircraft patrol operations, as they will insure that the patrolling aircraft cover the sea sectors designated.

Speed in the Air

London *Times*, January 27, 1928.—An attempt will be made to regain the world's speed "record" for seaplanes, and incidentally for all aircraft, with the Supermarine-Napier S-5 monoplane at the beginning of March, and preparations are now in hand for overhauling both the machine and the Napier Lion engine to be used for the effort.

The monoplane is the same type as that in which Flight-Lieutenant S. N. Webster won the Schneider Trophy at Venice last September, at an average speed for 218 miles of 281.699 miles an hour, and in which he set up an official "record" over 100 kilometres of approximately 285 miles an hour. The Italian machines, which failed to finish in the race, were subsequently tried out over a straight course of three kilometres, and Major Bernardi attained a speed, now confirmed, of 296.94 miles an hour. The British machine, to qualify for a new "record," must travel at least five miles an hour faster over the requisite distance, which means that a speed of at least 302 miles an hour must be reached as the average of two runs along the course in each direction, so as to allow for the wind.

There is little doubt that the Supermarine-Napier seaplane is capable of more than this speed, and there is every expectation that a British aircraft will be the first officially to exceed a speed of five miles a minute. The attempt will in all probability be made at Calshot, and it should easily be the most thrilling and inspiring of any of the world efforts to set up new speed "records." Very strict regulations are laid down by the Federation Aëronautique Internationale for the observance of these tests, and the measuring posts must be set in concrete at each extremity of the three kilometres. Beyond these are other posts 500 metres from the actual timed distance, and the aircraft must be in level flight, not more than 50 metres high, over the whole three kilometres plus the 500 metres before entrance to the timed distance. This is to insure that no fictitious speed is registered by diving down to the measured distance. As an additional assurance, a sealed barograph, carried in the machine, must not register a height below 50 metres or more than 400 metres, approximately 160 feet to 1,300 feet, throughout the speed runs, which are made as one continuous flight by turning in wide circles outside the course for each timed flight.

At a speed of 300 miles an hour, the four timed runs will take one and one-half minutes only, so that, even allowing for the wide turns, the thrill of watching this tiny machine hurtling through the air will be of short duration. The pilot has not been named, but it is generally supposed that Flight-Lieutenant S. M. Kinkead, who flew the Gloster-Napier biplane in the Schneider Trophy race, will be selected.

How Speed Is Obtained

The three designers responsible for the speed obtained by the Supermarine-Napier S-5 in the Schneider Trophy race each lectured last night before the Royal Aëronautical Society in explanation of how that speed was attained and indicated the directions in which further improvements might be made.

Mr. Mitchell, designer of the successful seaplane, said that he was unable for official reasons to give all the details about the design of the Supermarine monoplane, but he was able to give a most interesting analysis of the methods by which the speed

of last year's machine was increased over that of the previous monoplane known as the S-4, designed in 1925, which for a time held a world's speed record at 226 miles an hour. The wing was lowered on the fuselage to improve the pilot's view, and this was estimated to mean a loss of three miles an hour, but by bracing the wings instead of using a cantilever wing the three miles an hour were regained. The cross sectional area of the fuselage was reduced by thirty per cent, and this was responsible for an increase of eleven miles an hour. The floats were also reduced in frontal area, and here the estimated gain was four miles an hour. Wing surface radiators with smooth outer surfaces were designed, and this gave an increased speed of twenty-four miles an hour over the old type of separate radiator. Then the increase in horsepower of the engine and the higher propeller efficiency due to gearing and more efficient design were responsible for an increase of approximately thirty miles an hour.

The total net gain thus represented was not computed by the lecturer, but it amounts to sixty-nine miles an hour, and Mr. Mitchell gave an interesting table of the possible further speed gains assuming a twelve and one-half per cent variation in the following components. The lower resistance would give an increase of 12.1 miles an hour, and the decreased engine weight 3.5 miles an hour, while a twelve and one-half per cent increase in landing speed would add 9.7 miles an hour to the top speed, a similar increase in horsepower would give 8.6 miles an hour, and a 12½ decrease in structure weight would give an increase of five miles an hour—a total, under the assumed conditions, of 38.9 miles an hour.

MERCHANT MARINE

The White Bill

The Nautical Gazette, February 18.—The White Bill contains twenty-eight printed pages of type—it is the longest shipping bill in Congress. It covers the entire shipping field from the declaration of marine policy to the list of cities in which shipping advertising shall be placed, the classification of ships for postal purposes, the placing of marine reinsurance, the assignment of officers of the Navy to the Merchant Marine and their furlough and pay status while on such duty, accounting methods and courts of jurisdiction in legal appeals. It is very comprehensive and, unfortunately, seems to bear the earmarks of rather hasty drafting. Whether it is a genuine contribution to shipping thought in legislative proposals, or simply another evidence of the political indigestion from which the American shipping world is so continuously a sufferer, remains to be seen. In its essence it seems to propose that the Shipping Board shall get out of business immediately and at any cost, for it provides that the Shipping Board must sell any line that it is operating, whenever it shall receive an offer that is less than the existing annual deficit of such line, and that three-quarters of all net income, above eight per cent on the private capital actually invested, shall be set aside as a trust fund for the building of new ships "on account of such citizen." It also provides that a citizen may borrow seventy-five per cent of the cost of a new vessel at two and one-half per cent for foreign trade and at five and one-fourth per cent for coastwise.

Merchant Marine Bill

Washington *Post*, February 26.—The House committee on merchant marine and fisheries will begin consideration this week of the several bills designed to promote private ownership and operation of the merchant marine. It is encouraging to learn that the prospect of suitable legislation is brighter than it has been for many years. More careful thought has been given to the problem by legislators, shipbuilders, and operators and there is a nearer approach to agreement upon essentials than ever before.

The development of the American merchant marine depends upon several factors. First, there are pioneering shipping lines that cannot be operated with profit by private operators. These must be maintained for the time being by the Government. The Jones bill provides for the ships necessary to maintain these lines. Eventually these lines may be taken over by private enterprise.

Second, private enterprise must be assisted by the Government in overcoming the advantages enjoyed by foreigners in shipbuilding. American construction costs more. The Government will be asked to make advances to private enterprise at rates

of interest that will enable them to overcome the differential in favor of foreign builders. There is now in the hands of the Shipping Board a fund of about $90,000,000 intended to be loaned to private builders, but the rate of interest demanded by the Government is four and one-half to five per cent, too high for private builders to pay. They ask that the interest be reduced to two or two and one-half per cent, the principal to be repayable in twenty years. With the cheaper money they could build ships in competition with foreign builders. The Wood bill provides this relief, and will form the basis of the new composite measure that is to be prepared by the committee.

Third, private operators ask that increased mail pay be given for extra service and extra speed. The Copeland bill works out this problem, and its main features may be incorporated in the new bill.

Fourth, American shipowners ask that an adequate insurance system be established. The Shipping Board insures Government ships, but American shipping as a whole is under the thumb of the British insurance trust. American ship insurance companies reinsure their business with the Lloyds, and Lloyds' ratings are applied whenever American ships apply for insurance in British companies. By juggling the ratings, British insurance companies can and do raise the rates so high that American shipping suffers under a heavy handicap in competition with British shipping.

Fifth, a plan must be worked out for giving encouragement to Americans to join the Naval Reserve. It is suggested that an extra month's pay be given as a bonus to American seamen by the Government to be repaid in the form of added national security by creating a well-trained Naval Reserve capable of handling merchant ships in time of war.

Broadly stated, these proposals for restoring the American merchant marine will be considered by the House committee, together with other suggestions that may be made by builders and operators. If anybody can think of other or better methods for creating a merchant marine under private enterprise now is the time to bring them forward. Among the spokesmen of American shipping enterprise who will appear before the committee are Homer L. Ferguson, president of the Newport News Shipbuilding and Dry Dock Company, representing shipbuilders, and H. G. Walker, president of the American Steamship Association, representing owners.

MISCELLANEOUS

Submarine Safety and Salvage Devices

Mechanical Engineering, February.—There have been very many devices proposed for the salvage of submarines. Some of these are too impractical to call for serious consideration—for example, the use of huge magnets to lift the submarine from the bottom. Other devices, however, are in one way or another worthy of notice.

There are certain technical limitations with which the submarine designer has to contend, and those must be most carefully taken into consideration when it comes to the installation of any device whatsoever on a submarine. In the first place, submarines are now built so as to be capable of submersion to increasingly great depths. Where formerly 100 feet or 150 feet was considered good, the modern submarine should be capable of freely submerging to a depth of 300 feet, which means roughly a water pressure of 145 pounds to the square inch. This requires a very great increase in the strength of the hull, with a consequent increase in weight. Any addition of weight to the outside of the hull of a submarine requires an increase in size to provide the increased displacement necessary to carry this weight. The result is that when one ton is added to the weight of a submarine in the form of some fixture or attachment, such an increase in size is made necessary as will increase the total weight to the extent of 2.7 tons.

The next great limitation is that of space. A submarine has to carry about three times as much equipment for the power developed as does a surface ship. The propelling plant of the latter is what might be called a single-acting unit, say, steam or Diesel. A submarine carries a Diesel engine which drives it on the surface and also charges the storage batteries. To do this it has to have a powerful generator. The drive under surface is by electric motor from the storage battery. A three-step arrangement therefore becomes necessary, in addition to which the submarine has to carry water tanks, a supply of air, and for its size an inordinate amount of military equipment. It is therefore about as full of machinery as an ordi-

nary watch case, and every square inch of space is utilized to the utmost degree. None of this can be given up to any additional gadget without taking it away from something else.

SAFETY WEIGHTS OR DROP KEELS

One of the earliest methods of submarine salvage was the use of the so-called "safety weights," which consisted of huge blocks of iron or lead so attached to the bottom of the submarine that they could be released from the inside. The purpose of this was to decrease very rapidly the specific weight of the submarine and permit it to rise to the surface. Such weights were fairly regularly employed up to about the time of the World War, but the recent trend of opinion is against their use. In the first place, it has been found that the working of this device is neither rapid nor reliable enough for practical purposes. In the next place, the additional load reduces the speed of the submarine and its cruising radius to such an extent as to affect very materially the military value of the device. Finally, with the great increase in the size of submarines the weights that could have been used would have had to be inordinately large and, moreover, would have complicated the important problem of balancing when submerged. On the whole, therefore, the present tendency in design is to dispense with their use.

In one instance during the World War the drop keel was accidentally knocked off an English submarine by contact with the sea bottom. The vessel was unable to submerge after the accident and ran the danger of being sunk by the enemy, getting back to England by mere fortune. A step in the direction of abandoning this scheme was the adoption of safety tanks. These tanks were filled with water, thus providing an extra weight, and when necessary could be very quickly emptied by introducing very high-pressure air carried for this purpose in special cylinders.

DETACHABLE CHAMBERS

The next device from which great things were expected was the detachable chamber. The idea was to provide in the hull of the submarine small compartments with double doors working something like the Servidor device used in hotels. Double doors were to be provided so that a person could pass into this detachable chamber, close the doors after him, have the chamber detached from the submarine, and float up to the surface. One of the suggestions was to make the entire conning tower act as such a chamber, so that in case of necessity the whole crew of the submarine might save themselves in this way. The problem of designing such a device so that it will withstand when detached the considerable pressures met at substantial depths is not an easy one. Moreover, with the present large submarines carrying a crew of some 85 people, the device would have to be of a very considerable size. The question of placing these detachable chambers is also not an easy one. If they were located inside the hull they would occupy most valuable space, and space is what the designer of a submarine can least spare. If the chambers were located outside the hull, somewhat like warts on a frog's back, they would materially reduce the submerged speed of the vessel.

DIVING SUITS

It has been suggested many times—but not by submarine designers—that diving suits be provided for the crew, the idea being that in case of accident the crew could don these suits, open doors, and serenely walk out on to the ocean floor. The trouble with this scheme is, first, that in case of an accident, particularly where the hull is ripped open, there is seldom time for the rather elaborate operation of donning a diving suit. Next, not many men employed on a submarine are physically suited for work at substantial depths in an ordinary diving suit. On the other hand, however, in several European navies the so-called "oxylite" masks are carried. These masks have a chemical which is capable of absorbing moisture from the human breath and evolving oxygen in proportion thereto, so that a man can live in an oxylite mask for as long as three-quarters of an hour without breathing any outside air.

The main value of these masks is in case sea water should accidentally penetrate into the storage batteries. Because of the reaction between the sodium and magnesium chloride in sea water and the sulphuric acid in the batteries, such an accident would result in the evolution of chlorine. Should this happen when the submarine was submerged, time would be needed to bring the vessel to the surface and either ventilate it thoroughly or permit the crew to get out-

side. For such a purpose masks of the oxylite type are quite valuable, and being comparatively light and small they are not in the way.

The Extensible Tube

This device has been suggested on numerous occasions, the idea being to provide a tube of a diameter sufficient for a man of ordinary girth to pass through. This tube is supposed to be collapsed under ordinary conditions, somewhat like a traveler's aluminum drinking cup. In case of necessity it is to be extended so as to reach the surface and thus provide a means of egress for men trapped in a submarine. The device has never been adopted in practice by any navy, and the reasons for this are fairly obvious. Such a tube would have to be at least twenty-five inches in diameter. For a hollow tube to withstand water pressure at a depth of, say 300 feet, it would have to be made very strong, particularly at the joints, which means that it would have to be quite heavy. It would occupy a lot of room, require quite an elaborate arrangement for extending it, and then would provide egress only to men trapped in the one compartment with which the tube communicated.

Safety Tanks

All submarines of the United States Navy are fitted with an automatic device which may be set to operate at a predetermined depth. Several different types of valves have been used, all of which operate on the same principle, i.e., the unbalancing of forces previously in equilibrium by sea pressure due to the depth of submergence. The tripping of such a valve opens the 100-pound air line to one or more of the main ballast tanks, usually forward of amidships, and allows air to be blown into the tank, forcing the water out through the Kingston valve and thereby bringing the boat to the surface. These valves are not of an automatic repeating type but require to be reset by hand after each operation. Valves of this type have generally proved satisfactory, being capable of arresting the descent of the vessel to within five feet of the intended depth, and criticism mainly has been directed to the capacity of the reducing valve which supplies air from the 100-pound line. No standard valve has been adopted. Two varieties have beeen installed on contract-built submarines, both of which are covered by United States patents. A special type of automatic valve has been designed by the Portsmouth Yard and installed on the "S" vessels built by that yard, but has not been thoroughly tested as yet. Automatic control of the diving planes has been suggested and has been considered in a tentative way at various times, but no definite action along these lines has been taken, as it is believed that the complications involved would not be warranted by the advantage gained. The practicability of providing automatic arrangements for controlling the regulating or adjusting pump has been investigated, but in view of the complications involved it is not believed that the arrangement is practicable or would serve any useful purpose.

Signaling Buoys

Many of the European submarines are equipped with signaling buoys which in case of accident can be released by the submarine and will indicate its position. In the German navy, for example, these buoys are equipped with telephones, and at times attempts have been made to equip them at night with flares and in the daytime with smoke or sounding devices. These buoys were formerly quite extensively used in the American Navy, but of late have been discarded. The reason for this appears to be the possibility that in war time the concussion produced by depth bombs might release the buoy and thus indicate the position of the submarine to the enemy. It would seem to be quite feasible to use these buoys in peace time, and either batten them down or cut them off completely in war time.

If properly used and equipped these buoys constitute a valuable auxiliary, in particular, by indicating immediately the location of the submarine and possibly giving information as to the condition of the vessel, the condition of the crew, and the degree of necessity for prompt action. The design of these buoys is, however, as yet in a very crude state, and no facilities are provided for the men in all of the watertight compartments to communicate with the outside world by the telephone apparatus enclosed in the buoy. It may be stated in this connection that the whole subject of submarine safety devices is in an inchoate state, and that even where such devices are used their design is usually quite crude and lack-

ing in that careful working out which characterizes safety devices in civilian engineering.

This matter has been discussed with some of the officers of the Navy Department, who state that signaling buoys are not really necessary any longer. With the present listening devices the submarine can make its presence known quite easily in various ways and can be located without any trouble, provided some one is alive inside who can send out the information. If everyone were killed in an accident, the marking buoys would not operate anyway.

Watertight Compartments

In case of partial failure of the hull through collision or otherwise, watertight doors dividing the submarine into several independent compartments may prove to be the means of saving the lives of at least part of the crew. It is in this way, for example, that the lives of the men of the German submarine *U-3* were saved, and those on the American *S-4* prolonged.

The installation of watertight partitions and doors is a well-known naval device, and its reliability of design has been fully established in the past.

In the American Navy the bulkheads making watertight compartments are considered to be one of the most important provisions for safety on submarines. It is because of their presence that the lives of men on the *O-5*, *S-48*, and *S-5* were saved. The engineering features involved in the design of the watertight bulkheads are very interesting, and are being given the most serious consideration by the Navy. It should be realized in this connection that the big modern submarines are built to operate at depths in excess of 300 feet, which is equivalent to a pressure of about 145 pounds to the square inch. The bulkhead has to be built actually much stronger than even the hull, because while the pressure on the hull is determined by the $2\pi R$ relation, that on the bulkhead, should the water come in, is determined by the πR^2 relation. The modern bulkhead is therefore not a diaphragm structure with a door cut through it as one would imagine offhand, but a system consisting of very strong ribs with inverted dished partitions between them, and altogether represents an extremely strong structure.

External Means of Salvage

All the foregoing devices may be classed as internal means of salvage by which the men in a submarine in case of accident can take care of themselves. Assuming, however, that this proves to be impossible, or that the question is not so much the saving of life as the recovery of the sunken vessel, we come to external means. These may be classified into two groups—first, those for the saving of life, and second, those for the salvage of equipment. In war time, under certain conditions, the order of importance is reversed, the equipment being considered more valuable than the few lives which it may contain.

Air Supply to the Submarine

Only recently has this problem been thoroughly studied. There are two views as to how it should be done. One way is to supply air to the general air system, which includes the submergence tanks. The piping is so arranged that under ordinary conditions air pumped from outside will be delivered to all compartments. This may not happen, however, if the submarine has been seriously damaged as, for example, was the case with the *S-4*. The other way is to provide proper valve connections so that air can be admitted to individual compartments even when the general air system is injured. The former system has been adopted on American submarines. As a makeshift, air can be supplied to some compartments, as, for example, through the listening tubes, provided the proper valves are opened from the inside, and provided proper connections are either available or have been made for attaching the air hose. It does not appear clear why both systems should be used simultaneously, and it would appear perfectly feasible to change somewhat the piping arrangements, possibly by providing two-way valves, so that the system could be used either as a single system or for supplying individual compartments.

Lifting Means

In the event that the injury to the submarine is of such a character that there is no way for it to rise to the surface of itself, even with the main tanks emptied of water, the thing to do is to raise it by outside means. There are only two ways available: one is to attach to the submarine additional tanks, force the water out of them,

and thus float the vessel; the other is to attach chains or wire ropes directly to the submarine and hoist it by brute force. In either event the operation falls into two stages: (1) attaching lifting pontoons or hoisting chains to the submarine; and (2) putting through the hoisting operation itself. When plenty of time is available the operation is comparatively simple, provided of course that the submarine lies at a depth at which diving operations can be carried out without extreme difficulty. Where sufficient time is not available, those who are going to carry out the raising operation will sincerely appreciate any provision for doing the work as quickly as possible. It may be mentioned in this connection that time may not be available for two reasons. In the first place, men yet alive may be caught in the sunken vessel and the highest possible speed of operation may be needed to preserve their lives. In the second place, weather conditions may be such as to afford only a limited time in which to do the job. A combination of these two conditions was present, for example, in the initial salvage operation of the *S-4*.

Means of Attaching Chains or Pontoon to a Submarine

Any engineer who has had experience with crane operation or derrick work in construction knows the great difference between raising a heavy piece, so designed that it can be conveniently held by the crane hooks or chains, and doing the same job with perhaps a much lighter piece of such a shape that one has to use special ingenuity to hold it and is then perhaps not quite certain of being able to do so. While every designer of submarines knows that because of its very character of operation it is apt to get into trouble, out of which it will have to be pulled by raising, still the provisions for carrying out this operation are anything but ample. The most obvious way to assist in the raising operation is to do with the submarine what is, for example, done with a ladle or ingot mold in a steel mill, i.e., provide it with either bosses or eyes to which hooks or chain loops can be engaged. In fact, the Navy has been blamed by some Congressmen for not having done so in the case of the *S-4*. However, this question of hooks or bosses is more involved than appears on the surface. The early submarines were quite frequently provided with eyes riveted on the hull. Those vessels, however, were comparatively small and the load on each eye therefore quite light. With large modern submarines a rather different situation presents itself.

It should be remembered in this connection that the stress is not applied evenly to the eyes in lifting a submarine. A crane operator lifting a foundry ladle can more or less control the stress on the crane hook by pulling it up slower or faster. He is, however, operating from a perfectly fixed base, the crane bridge. The salvage vessels, on the other hand, when raising a sunken ship have no such fixed base, but on the contrary are supported by that most restless element, the ocean, with the result that the stress is either half eased off or suddenly applied with a powerful jerk. The strength of the hook or eye on a submarine is no greater than the strength of the rivets or the weld that holds it to the hull, or the strength of the hull itself. A brief calculation will show that if it were attempted to raise a submarine of the size of the *S-4* by a few hooks or eyes welded or riveted on to it, the chances are that the hull would be ripped apart or the hooks torn away.

Of course, the reply to this will be, why have a few hooks and not a multiplicity of them? Here again the trouble lies with the lack of a fixed base. If we were to hoist a load from a crane bridge, it would be a comparatively easy proposition to provide, if necessary (and it is seldom necessary), a multiplicity of chains and arrange them in such a manner that the load would be easily distributed among all the chains. If, however, the same thing were attempted in marine salvage operations without some very special equipment, the chances are that the load would alternately vary and be carried at all times by some two or four sets of eyes, at least to the extent of seventy-five per cent, so that the multiplicity of these eyes would not materially help in relieving the stresses on the hull.

The French submarine designer Laubeuf proposed, however, a modification of this device which appears to be of sufficient importance to deserve serious consideration. What Laubeuf suggested is to attach wide bands of metal to the submarine by riveting or welding and to have the hooks or eyes for the accommodation of the lifting chains made a part of these bands. In this way the hoisting stress would be distributed over

a comparatively wide area of the hull, and with proper design and distribution of these bands it would appear possible to give these hooks or eyes such proportions and such a distribution as would assist materially in accelerating the raising operations.

Since Laubeuf's time a new development has taken place which may help in this connection. All that Laubeuf had at his disposal were carbon-steel bands with a tensile strength of some 100,000 pounds. Today it would be possible to make these bands in the form of chrome-nickel steel forgings with a tensile strength considerably in excess of 200,000 pounds and a permissible emergency loading of some 175,000 pounds per square inch. Under these conditions such bands with the concomitant hooks or eyes would appear to be well deserving of serious consideration.

It should be borne in mind that the provision of bands will require in the first place possible changes in the design of the longitudinal frame members of the submarine, with the idea of giving them additional stiffness. This is a more difficult problem than a layman or engineer who has not had anything to do with submarine design realizes. The other point to which very serious consideration must be given is such streamlining of these bands as will not materially reduce the submarine speed, particularly its surface speed, the underwater speed being too low to be materially affected by the presence of the bands.

Attaching Chains to Submarines

Obviously, before a submarine can be lifted, chains have to be passed properly around it. It may be somewhat surprising to an engineer to learn that no provision for doing this quickly and conveniently is made on any of the submarines of any country. The submarine may be lying in the most inconvenient position, on a rocky bottom or—which is equally bad if not worse—partly sunken in mud as is the case with the *S-4*. When this happens tunnels have to be laboriously blown under the submarine hull to pass the chains or hoisting ropes. This means increasingly hard and dangerous work on the part of the divers, possible interruptions by weather, with destruction of what has been already done on the bottom, and furthermore no certainty that the chains will be placed where they should be. To an engineeer it would appear that a very simple provision could be made to take care of this situation. This could take the form of welding on to the submarine hull a few thin channel-shaped pieces so arranged that they could be opened in places and serve as guides for the hoisting chains. It would be a simple matter to locate in these channels a slender wire rope with proper provision for attaching the chain at one end and passing it around the submarine by pulling on the rope from the other side. The operation in principle would not differ from the way in which heavy cables are passed underground by the telephone companies. Proper thought should be given to making these channels of such a shape as not to reduce the surface speed of the submarine, but otherwise the device is extremely simple. There is one objection to it, however, and that is that these guide channels being made of fairly thin metal, would be apt to get bent or twisted. Should this happen the submarine would be no worse off than it would be without them, and there is really no reason why they could not be made strong enough to withstand ordinary bumping.

CURRENT ARTICLES AND BOOKS

"The Selection and Defense of Naval Bases," by Major Harry W. Stark, in *The Coast Artillery Journal*, February, 1928.

"The People Do Not Make War," by Lieutenant Colonel J. M. Scammel, in the *Infantry Journal*, February, 1928.

"Aircraft Armament Development," by Lieutenant R. C. Coupland, U.S.A., in *Army Ordnance*, February, 1928.

"Military Airplanes—Equipment for Offense and Defense," by Lieutenant Geo. H. Steel, U.S.A., in *Army Ordnance*, February, 1928.

"The Chemistry of the Chemical Warfare Agents and of Protection Against Them," by Major C. B. Wood, M.C., U.S.A., in *The Military Surgeon*, March, 1928.

"Aircraft Power Plants," by E. T. Jones and others.

"Arbitration and Security"—in *The Spectator*, January 7, 1928.

"American Ships and British Opinion"—*American Review of Reviews*, February, 1928.

"Outlawing War," in *The Spectator*, January, 14, 1928.

NOTES ON INTERNATIONAL AFFAIRS

FROM FEBRUARY 3 TO MARCH 3

PREPARED BY PROFESSOR ALLAN WESTCOTT, U. S. NAVAL ACADEMY

PAN-AMERICAN CONFERENCE

GENERAL RESULTS.—The Pan-American Conference at Havana continued into February; was enlivened by the arrival of Colonel Lindbergh on February 7, and closed on February 20. In the later sessions the United States did not stand isolated from the Latin American nations, but was frequently supported on important issues by some of the larger South American countries, notably Peru, Chile, and Brazil. Both the questions of non-intervention and of removal of tariff barriers were brought sharply to the front during the closing sessions, but were finally side-tracked without disruption of the conference, though this seemed to be the motive of the delegates who brought these issues to the fore. The three main accomplishments were: (1) provision for a conference to meet during the present year and work out definite machinery for settlement of disputes among American states by obligatory arbitration; (2) reorganization of the Pan-American Union, while leaving it on a non-political basis as before; (3) a beginning toward codification of international law. It was decided that the next meeting should be held in Montevideo, Uruguay.

In the American press there was general praise of the skill of Chairman Hughes, of the American delegation, in furthering American interests. One dissenting voice, however, was that of Professor Latané, who was reported to have declared at Yale, on February 27, that Mr. Hughes had taken advantage of the mutual jealousies and special interests of the Latin American states to divide them on important questions, and had used his great skill as a lawyer to prevent the reorganization of the Union on lines that might interfere with American policy in the Caribbean. "Now that we have become the wealthiest and most powerful nation," said Professor Latané, "we do not care to be hampered by arbitration treaties, international courts, and leagues of nations, European or American."

THE ARBITRATION PLAN.—The arbitration resolution adopted by the conference followed closely suggestions made by Mr. Hughes. It adopted the principle of compulsory arbitration among the American states, and provided for a conference to meet in Washington during the coming year and draw up an arbitration convention or agreement which should then be submitted to the countries for their acceptance. The resolution expressed the view that the agreement should leave outside the field of arbitration (a) questions affecting sovereignty, (b) domestic matters, and (c) matters involving states not parties to the agreement. In suggesting these exceptions, the recent Franco-American arbitration treaty was quite evidently taken as a model.

THE INTERVENTION DISPUTE.—The hottest fight in the conference came up in the Committee on Codification of International Law over the proposal to adopt as an accepted principle the bald declaration, "No state may intervene in the internal affairs of another." This was criticized as absurdly at variance with common practice, and in its place the United States and other delegations favored a formula, originally worked out in 1916, which emphasized the duties

as well as the rights of nations and read as follows:

> Every nation has the right to exist and to protect and conserve its existence; but this right neither implies the right nor justifies the act of the state to protect itself or to conserve its existence by the commission of unlawful acts against innocent and unoffending states.
>
> Every nation has the right to independence, in the sense that it has a right to the pursuit of happiness and is free to develop itself without interference and control from other states, provided that in so doing it does not interfere with or violate the rights of other states.
>
> Every nation has the right to territory within defined boundaries and to exercise exclusive jurisdiction over its territory and persons, whether native or foreign, found therein.

This milder statement was opposed by Dr. Pueyrredon of Argentina, Dr. Guerrero of Salvador, and by Mexico. The matter was left for the next conference. Dr. Guerrero attempted to revive the dispute at the plenary session on February 18, but withdrew his resolution when it became evident that it would not win general support. Other recommendations of the Law Committee adopted at the final session were:

1. A convention regulating all formalities surrounding treaties. Salvador announced it would not sign this, while Bolivia and Mexico introduced reservations.
2. A convention on maritime neutrality drafted by the Committee on Public International Law. The United States made reservations to a clause forbidding the arming of merchantmen for defense in time of war and carrying the penalty of loss of their status as neutrals.
3. A draft convention on the rights of asylum of foreigners, with reservation again made by the United States.
4. A convention on the rights of aliens. Again the United States made reservation to the proposal forbidding the subjection of aliens to military service.

REORGANIZATION OF THE UNION.—The new convention for the organization of the Pan-American Union avoided any really significant changes, especially such as would endow the Union with semi-political powers in the field of arbitration and conciliation. Upon the rejection of his proposal that the preamble should contain a clause about removal of economic barriers, Dr. Puerreydon, of Argentina, refused to sign the committee report, and when his government advised a conciliatory attitude he resigned as head of the Argentine delegation. His successor later signed the reorganization plan, but with a reservation expressing regret that a declaration against excessive tariffs had not been inserted.

NICARAGUA

LIBERALS NOMINATE MONCADA.—As was anticipated, the Liberal Party Convention at Leon, Nicaragua, in February nominated General Moncada, former leader of the revolutionary forces, as their candidate for president in the elections to be held next October. There was some talk at Managua of holding a conference in Washington to select a compromise candidate acceptable to both parties, but this was rejected by the Liberals as simply a device of the Conservatives to prevent the election of Moncada. In the meantime, U. S. Marines in Nicaragua continued their pursuit of the elusive Sandino, and at the close of February five marines were killed and nine wounded in an attack on a supply train.

AMERICAN MONEY IN NICARAGUA.—According to correspondence from Managua in the New York *Times* the total American capital in Nicaragua amounts to about $12,000,000. Of this, ten million is invested on the east coast in fruit, lumber, and small mining interests, the Standard Fruit Company having an investment of about eight million. The British have about $2,500,000 in commercial houses and coffee farms. The government owes about $3,500,000 to England, but the debt to American interests has been reduced to $185,000, which is to be paid off within three months. The Nicaragua Bank still has four American directors out of nine, and its reserve of $350,000 is deposited with New York banking houses. The railway is operated by the J. G. White Management Corporation of New York at $1,400 a month.

ARBITRATION AGREEMENTS

FRANCO-AMERICAN TREATY SIGNED.—The Franco-American Arbitration Treaty was signed on February 6, the 150th anniversary of the first treaty of alliance in 1777. Like the Bryan Treaty of 1914, it will continue indefinitely unless denounced by either country on a year's notice. Although somewhat more explicit than the former Root Treaty in its definition of questions not subject to arbitration (i.e., domestic questions, questions involving other states, and questions involving the

Monroe Doctrine or the obligations of France to the League), the treaty is still so weakened by these exceptions that experts have declared they could scarcely imagine a question that would properly be subject to arbitration under the treaty.

Since according to State Department announcements this treaty will serve as a model in negotiations for similar agreements with Great Britain and other nations, its main text is here given:

ARTICLE I.

Any disputes arising between the government of the United States of America and the government of the French Republic, of whatever nature they may be, shall, when ordinary diplomatic proceedings have failed and the high contracting parties do not have recourse to adjudication by a competent tribunal, be submitted for investigation and report, as prescribed in the treaty signed at Washington, September 15, 1914, to the Permanent International Commission constituted pursuant thereto.

ARTICLE II.

All differences relating to international matters in which the high contracting parties are concerned by virtue of a claim of right made by one against the other under treaty or otherwise, which it has not been possible to adjust by diplomacy, which have not been adjusted as a result of reference to the above mentioned Permanent International Commission and which are justiciable in their nature by reason of being susceptible of decision by the application of the principles of law or equity, shall be submitted to the Permanent Court of Arbitration established at The Hague by the Convention of October 18, 1907, or to some other competent tribunal, as shall be decided in each case by special agreement, which special agreement shall provide for the organization of such tribunal if necessary, define its powers, state the question or questions at issue and settle the terms of reference.

The special agreement in each case shall be made on the part of the United States of America by and with the advice and consent of the Senate thereof, and on the part of France in accordance with the constitutional laws of France.

ARTICLE III.

The provisions of this treaty shall not be invoked in respect of any dispute the subject matter of which

(A) is within the domestic jurisdiction of either of the High Contracting Parties,

(B) involves the interests of third parties,

(C) depends upon or involves the maintenance of the traditional attitude of the United States concerning American questions, commonly described as the Monroe Doctrine,

(D) Involves in any manner the observance of the obligations of France in accordance with the Covenant of the League of Nations.

ARTICLE IV.

The present treaty shall be ratified by the President of the United States of America by and with the Senate thereof and by the President of the French Republic in accordance with the constitutional laws of the French Republic.

The ratifications shall be exchanged at Washington as soon as possible, and the treaty shall take effect on the date of the exchange of ratifications. It shall thereafter remain in force continuously unless and until terminated by one year's written notice given by either High Contracting Party to the other.

TREATY PROPOSALS TO ENGLAND.—Speaking in the House of Commons on February 8, the British Foreign Minister, Sir Austin Chamberlain, stated that an arbitration treaty, similar to the Franco-American Treaty, had been submitted by the United States to the British Foreign Office, and that its provisions were being carefully considered. He took occasion to reiterate his former statement, made after the failure of the Geneva Conference, that "war with the United States is unthinkable . . . . and never has been and never will be the basis of our policy in anything."

NEW NOTE ON RENOUNCING WAR.—On February 27, Secretary Kellogg handed to Ambassador Claudel a note renewing discussion of the Briand proposal for a treaty between France and the United States denouncing war. Secretary Kellogg restated his arguments in favor of making the treaty a multilateral treaty to include Britain, Italy, Germany, and Japan. He argued that commitments to the League of Nations would not stand in the way of an "unequivocal and unqualified renunciation of war as an instrument of national policy," and he declared that such a declaration would be greatly weakened if "accompanied by definitions of the word *aggressor* and by exceptions and qualifications. . . . ." To this note the French press remained somewhat cool, suggesting that Ministers Briand and Kellogg were engaged in a polite game of calling each other's bluffs. It queried whether such an agreement, if it were to be more than a pious expression of opinion about wars, could be so easily arrived at, and whether the Senate which had kept the United States out of the League and the World Court would adopt, "without exceptions or qualifications," a treaty abolishing the right to fight under any conditions.

PROPOSAL FOR SEA LAW CODE.—At the close of February Senator Borah announced that he would introduce in the United

States Senate a resolution suggesting an international conference to attempt the codification of international maritime law, prior to the next naval conference in 1931. Definite and final acceptance of laws governing sea warfare would no doubt simplify problems of armament; but in view of other commissions engaged in international law codification, both under the League of Nations and the Pan-American Union, it did not appear probable that a Senate resolution would have much practical effect.

Of interest, in connection with the Borah proposal, was the statement of Secretary Kellogg, in a letter on February 4 to the Chairman of the House Foreign Affairs Committee, that the United States Government would favor an agreement abolishing submarines, but only in concert with other powers. As indicated by press comment, it became clear at once that France and other nations interested chiefly in defensive and commerce-destroying measures would oppose the abolition of so useful an instrument.

THE SECURITY PROBLEM

MEETING OF SECURITY COMMISSION.—The Security Commission, created last December to supplement the work of the League Preparatory Disarmament Commission, met at Geneva on February 20, under the chairmanship of Foreign Minister Benes of Czechoslovakia. The Soviet Government sent a delegate, who renewed the Soviet proposals of total disarmament. The United States was not represented. It appeared unlikely that anything very definite would be accomplished before the meeting of the League Council on March 5, or of the Preparatory Disarmament Commission on March 15. It was stated, however, that the Benes Commission would favor regional compacts, on the lines of the Locarno Treaties, as the most practical steps towards the solution of the security problem, the idea being to set up agreements, not merely between friendly nations, but between nations with real conflicts of policy, as between the Little Entente and Hungary, or between Bulgaria and the other Balkan states. A "Mittel Europa" compact was suggested which should include Austria and Hungary with the Little Entente powers. Such a compact would please France as a possible preventive of the union of Germany and Austria, but would be opposed by both Germany and Italy.

The meetings of the commission were actually taken up chiefly with the discussion of various models for arbitration and security treaties. The point was raised by the British delegation that treaties of "mutual assistance" against aggression had the effect really of treaties of alliance ranging nations in hostile combinations, and that many of the existing treaties in Europe were of this character.

MARCH CONFERENCE.—The meeting of the League Council set for March 5 had in prospect several difficult problems, notably that raised by the machine gun shipment to Hungary, discussed below, and Poland's complaint that Lithuania had refused to open relations as stipulated in the settlement of last December.

It was announced that Mr. Hugh Gibson, United States Ambassador to Belgium, would again be head of the American delegation at the meeting of the Preparatory Commission for a Disarmament Conference on March 15, replacing Minister Hugh Wilson of Switzerland, who was chairman of the delegation at the December meeting. As for the summoning of a general conference, it appeared hardly likely within a year, in view of the prospective elections and governmental changes in several of the chief European countries.

ITALY AND CENTRAL EUROPE

THE AFFAIR OF THE MACHINE GUNS.—Apparently a tempest in a teapot, the portentous consequences arising from the seizure of an Italian shipment of machine guns on the Hungarian frontier last January well illustrated the present tension existing in the Balkans. According to later reports, this was not the first Italian arms shipment to Hungary, but the tenth. On February 22 the President of the League Council, acting on complaints from the Little Entente powers, telegraphed to Hungary requesting that the guns should not be disposed of pending league investigation. Premier Count Bethlen of Hungary replied politely that the sale of the guns could not be postponed, but that the purchaser would be asked to keep them intact for inspection. Next day they were sold on these terms to a Budapest dealer in scrap iron for $300.

Italy disclaimed responsibility in the whole affair. It appeared likely, however, that the League Council in its March session would be forced to take some action and that this might be a test of the League's influence in a matter which, though trivial in itself, concerned two major powers, France and Italy, each jealous of the other's interests in the Balkans.

AUSTRO-ITALIAN RUPTURE.—As a result of criticism of Italy's alleged mistreatment of Germans in Southern Tyrol, expressed by Chancellor Seipel in the Austrian Chamber on February 23, Premier Mussolini ordered the Italian Minister at Vienna to return at once to Rome for a verbal report of the affair. A break of relations threatened, but some were inclined to regard the difficulty with Austria as merely a device of Italy to distract attention from the trouble over the machine gun shipment to Hungary.

GERMANY

BREAK IN GOVERNMENT COALITION.—By the end of February it appeared clear that the coalition of Nationalist, Center, and Peoples' Parties supporting the Marx cabinet would soon come to an end. Irreconcilable differences developed between the Center and Peoples' Parties over the new school legislation, but deeper than this was the desire of Foreign Minister Schlesemann to throw the Nationalists over in favor of a union between the middle parties and the Socialists, in the belief that the next election would show a drift to the leftward parties. Such a grouping would afford stronger support for Schlesemann's policy of furthering German interests by conciliatory relations with France and England. An immediate break was prevented, however, by President von Hindenburg's insistence that the cabinet remain in office and the Reichstag in session until essential financial legislation was put through.

FAR EAST

RESULTS OF JAPANESE ELECTIONS.—Following the February elections the new Japanese Diet was summoned for a brief session to begin on April 20. The election resulted in a deadlock, in which the Seiyukai or Government party obtained 221 seats; the Minseito 214; Independents, Laborites, and others 21. Of the new electorate of 12,000,000, eighty-one per cent went to the polls. In this stalemate the new budget was dropped, the old budget remaining automatically in force, and the Government appeared unwilling to adopt a positive policy in foreign affairs. The Laborites met on March 1 to consider the terms on which they would support the Minseito, among their more noteworthy demands being government sanction of birth control, minimum wage, and regulation of food prices.

UNITED STATES

AMERICAN INVESTMENTS ABROAD. (From New York *Times*, February 27)—American foreign investments at the close of last year amounted to approximately $14,500,000,000, not including the so-called political obligations of the United States Government, according to a compilation by Dr. Max Winkler, vice-president of Bertron, Griscom & Company, in a report published by the Foreign Policy Association of New York.

If the war debts are included the total value of American investments abroad reaches a total of about $25,600,000,000, as compared with about $18,000,000,000 or $20,000,000,000 for Great Britain when British foreign investments were at their peak.

Our total foreign investments during 1927, not including refunding operations, amounted to $2,071,954,100, a figure materially larger than the amounts reported by other agencies. This is explained by the fact that Dr. Winkler's figures include not only publicly offered loans, but also issues placed privately, as well as the purchase by Americans of foreign internal securities and the purchase of properties abroad not involving the sale of securities. It further includes loans and advances to foreign governments, states, municipalities and corporations running for one year or more.

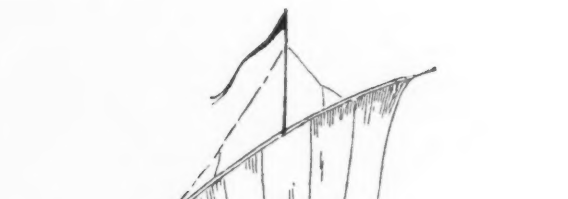
Dr. Winkler does not discern any curtailment of American foreign financing in the near future. He says:

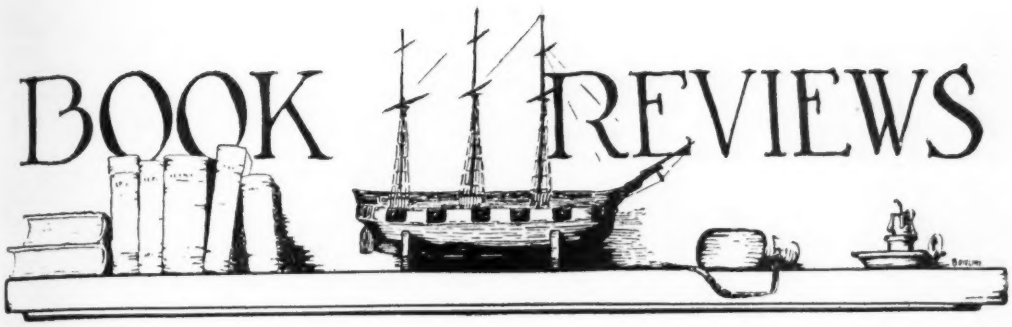
"Although our foreign investments were scattered all over the five continents, the field is by no means exhausted; 1928 and subsequent years may witness further expansion with corporation financing assuming a much more important part than heretofore. American dollars are in demand every-

where and there seems no discrimination anywhere against them, even though there may be a certain prejudice against our nationals."

At the present time American investments in Europe exceed those in any other part of the world. Canada and South America, however, are becoming close competitors. The geographical distribution of our total foreign investments at the close of 1927 was as follows:

Europe	$4,327,000,000
Canada	3,922,000,000
South America	2,246,500,000
Central America	2,914,600,000
China, Japan and Philippines	726,500,000
Miscellaneous	363,400,000
Total	$14,500,000,000





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A GLOSSARY OF SEA TERMS. By Gershom Bradford, Master of Sail and Steam, etc. Yachting, Inc., New York. 205 pages. $3.00.

An excellent up-to-date "Scholar's Companion" so to speak, for those who aspire to speak the language of the sea. To embryo sailors of all classes, including sea-apprentices, yachtsmen, novices, naval reserves of first enlistment, candidates for the Naval Academy, the author has rendered good service. To shell-backs, wind-jammers and the other veteran seamen, the book will afford pleasant reference. It covers a wide field ranging from the trireme of the Phoenecians to the gyro-compass and razzle-dazzle camouflage. It is too inclusive, for while it excludes the terminology of the engine and fire-rooms, it lists, mistakenly in our opinion, many astronomical definitions which can scarcely be accepted as sea terms. This criticism applies also to such words as "British Thermal Units," "Caduceus," and many expressions borrowed from International Law.

If the book runs through other editions, and we certainly bespeak for it a fair wind and much favor, the author would do well to correct certain palpable errors, typographical and others. For instance, the French for admiral is not "almiral"; "dead-horse" is the amount of pay drawn in advance, and not the time required to work it off; a "bow line" is a line and not the bridle on the leach of a sail to which the bowline is toggled; a "balsa" is a life-raft formerly supplied men-of-war, and not the wood of which it is made; and a "barbette" on board a ship is a gun emplacement *over* which a gun is fired, and not necessarily a secondary battery gun.

There are omissions of many common expressions which doubtless will be included in subsequent issues, such as "coach-whip"; "booms"—the stowage space on spar deck between fore and main masts, for spare spars, heavy boats, etc.; Jimmy legs; "blacklist"; "bluejacket"; "leather neck"; "show a leg"; "halliard rack"; "snickersnee"; "flinch," i.e., cutting in process of whalers, —"the flinching of the fleets of fair Dundee," Kipling; "shake," in the sense to break down, i.e., to shake a balsa is to take it to pieces, etc.

It will be a surprise to many old sea-goers to find in the glossary catalogued as sea terms the following which we confess we never heard of: "Bagy. wrinkle," "bald headed schooner," "eye-brow," "mud pilot," "flower of the winds," "iso," "funny," "jibber the kibber," "grave yard watch," etc.

A. G.

MEMORIES OF A BLUE-JACKET, 1872-1918. By Patrick Riley. Illustrated, Sampson Low, Marston and Co., Ltd., London. 16/

REVIEWED BY CAPTAIN J. K. TAUSSIG, U. S. NAVY

As a general rule, when one takes up an autobiography he expects to find a book written by some well known personage who

desires to leave for those living and their posterity an account, from his view-point, of the background, incentives, reasons, influences, and perhaps the excuses, for the accomplishment of those acts and deeds from which the author may claim the right to greatness, or for which he may have had such honors thrust upon him. But in the *Memories of a Blue-Jacket* we find no such underlying motives. The author has no claim to fame, and his reasons for writing his memories are best expressed in the Preface where he says: "I have endeavored to put before my readers a clear and lucid description of the life of a Blue Jacket from the lower deck point of view."

Patrick Riley, the author, passed into the Royal Navy as a second-class boy in October, 1872. He gave his age on enlistment as fifteen years and one month, but discovered later that his aunt with whom he had been living gave his older sister's age by mistake, and that in reality he was only thirteen years and eight months old; certainly a tender age for one to begin the hard and rigorous sea life of those days. While modesty prevents the author from depicting his own sterling character and qualities, that he possessed them is evident to any reader who follows his career through the early trying days of his apprenticeship to the final chapter, where, after eighteen years as gunnery instructor, he joined the Royal Naval Pensioners' Reserves, finally to emerge again for active duty in the World War.

Riley started his naval career on the *Impregnable,* an old three-decker employed as a training ship at Devonport. His pay was sixpence a day. Think of it! $3.60 a month; and out of this sum he was allowed threepence (reverently called a "Holy Joe") a week for spending money. The daily routine of the boys under training was strenuous indeed. The food was poor. No better description of the rations could be given than in the author's own words:

> Breakfast. A basin of ship's cocoa with dry soft bread. This on four days each week; on the other three days we had ship biscuits instead of bread. . . . .
>
> Dinner was practically the only meal we had for the day. It varied from salt beef from the harness cask, with "figgie dough, seapie," i.e., layers of dough, meat and vegetables tied down and boiled in a large copper, "Schooner on the Rocks," i.e., joint of meat roasted on potatoes, or "toad in the hole." There was no salt provided in those days, so that one had to beg some from the harness cask, dry it in the oven, and pound it up small. . . . .
>
> We had our supper of bread and cheese, and by going to the drinking tank with a basin we could obtain plenty of what the lions drink to wash it down.

On completion of his apprenticeship on board the *Impregnable* and the brig *Squirrel,* Riley was transferred, in June, 1874, to H.M.S. *Amethyst,* a new square-rigged ship with auxiliary steam (maximum speed 11.5 knots), and carrying fourteen sixty-four-pounders. Her complement was 220 all told. Much the larger part of the *Memories* recounts the incidents of a cruise in the vessel which sailed from Plymouth on June 20, 1874, not to return until May 18, 1878, after a final run of seventy-eight days from Valparaiso.

This four-year cruise of the *Amethyst* was more or less routine for British men-of-war in those days; but it was replete with unusual and interesting experiences. The ship on crossing the equator, en route to Rio de Janeiro, was visited by Neptune and his Court, just as is done today. Many places were visited—Santos, Montevideo, Buenos Aires, and thence through the Straits of Magellan, stopping at Punta Arenas, and on to Valparaiso via Smyth's Channel. The men of the lower deck, seldom getting ashore, saw the world through a port hole, and apparently expected nothing else.

Northward the *Amethyst* wended her way, visiting practically all the important cities and many smaller places on the west coast of South America, touching at San Francisco, where sentries had to be placed in the coal barges alongside to prevent the men from deserting; on to Esquimault and back again to South America, during which time two visits were made to romantic Juan Fernandez Island.

One of the most interesting chapters deals with the engagement between the British ships *Shah* and *Amethyst* on the one side and the Peruvian turreted ship *Huascar* on the other. The *Huascar,* at the instigation of ex-President de Pierola, who was engineering a revolution against the Peruvian Government, had severed its connection with the regular Navy and apparently was making depredations on British commerce—enough so to be considered a piratical ship. So when the British men-of-war encountered her, they immediately attacked. Al-

though the *Huascar's* upper-works were much damaged, no vital injury could be inflicted, owing to her superior protection. The *Huascar* escaped in the darkness, finally to surrender to the Peruvian Navy.

The latter part of the book is replete with interesting details of more or less routine cruising in various ships to all parts of the world—the Baltic, the West Indies, the Mediterranean, and the Far East. Among the important events and incidents recorded are the transferring of the Island of Heligoland to the Germans, the loss of H.M.S. *Victoria* in collision with the *Camperdown*, and the capture of Wei-Hai-Wei by the Japanese.

The illustrations comprise a number of excellent prints showing the various ships on which the author sailed and giving an excellent idea of the gradual development and change in naval architecture from the days of the three-decker *Impregnable* to those of the handsome fast cruiser *Edgar*.

Perhaps the greatest impression made on the reader is the equanimity with which the sailor men of the last century put up with the discomforts, hardships, etc., which were the lot of those who followed the sea.

While even now there is considerable prejudice in some quarters against the sea-faring man keeping pace in living conditions with his brothers of equal or less intelligence who work only on shore, fifty years ago no one, not even the men themselves, expected to be comfortable or to have good wholesome food. Riley tells us of these discomforts without so much as insinuating that it was not right and just that they should be borne by the men on the lower decks. In only one or two places does he call attention to the fact that the great evil of liberty and leave breaking was increased by unnecessary restrictions placed on the men. As one reads through the book, the narrative shows how there was a gradual improvement in many of the unsatisfactory conditions that existed and to some extent still exist, for the enlisted man on board ship. But one is left at the end with the impression that, in spite of these improvements, the British sailor man of today is not so well off as is his American cousin.

THE BEGINNINGS OF ORGANIZED AIR POWER. By J. M. Spaight, Longmans, Green and Company, New York. $7.00.

REVIEWED BY CAPTAIN T. T. CRAVEN, U. S. NAVY

In a well-written volume, recently put into circulation, Mr. Spaight discusses the upbuilding and the usefulness of flying strength.

In his opening chapter, he compares the development of air power with the development of sea power, but, in his analogy, the historic importance of sea trade and the influence of the merchant ship in the construction and sustenance of a vigorous and healthy naval organization are overlooked and the writer confines himself to a single feature of airplane employment, i.e., combat in the air.

The author states that "there is, in his conception of air power, nothing involving a denial of a need for the subordination of the air arm, for tactical or minor strategic purposes, to armies or fleets," but that "there is, in fact, a guarded implication, perhaps not as yet a dogmatic assertion, that an independent air war is just as conceivable as an independent land or sea war."

Those who visualize for the aviator in war many important rôles, will regret the absence of treatment of operations such as observation, communications, and the application of force in connection with or against land or sea units, none of which has been taken up by the author of *The Beginnings of Air Power*.

The volume treats briefly, but in an interesting way, of the rapid and continuous development of the crude machines, as first employed by the belligerents, into the splendid creations of the last days of the struggle.

The greater part of the book is given over to an exhaustively complete and interesting study of the steps taken by England to coördinate and to amalgamate the aviator with the other members of the huge military bodies locked in titanic struggle in an area comprising practically the entire continent of Europe. The reader will appreciate that England's conditions were peculiar at that time. Her major effort was that applied by

the soldier, as the great British Fleet successfully held the inferior naval force of the enemy in restricted waters and in close proximity to their own coasts. Under these circumstances, England became convinced of the desirability of uniting all flying activities under a single department. Of the correctness of the decision for the solution of the grave problem, which at that time confronted the state, there appears to be no question.

Naturally all of those who, in days of war, were intimately concerned with the development of aviation will find the historical sketch of the creation of the British Air Ministry, and the frank criticisms of this well-informed investigators, of compelling interest and value. Such individuals will, however, wish to make reservations in some instances regarding both assumptions and conclusions as they are set forth in this volume.

In his closing chapters, Mr. Spaight deals with the forms of organization and comparative strength of the four Great Powers, all of whom he scrutinizes exhaustively. He here devotes considerable space and is free and unfavorable in comments as to American methods and results, as well as to the cost in dollars and cents of our achievement.

The author possibly understands but does not stress the fact that the greatest aëronautical need of America at the time of entry of the United States into the war was information as to the science of aviation as it was then being practiced by the belligerents after three years of bitter experience.

What the United States immediately attempted in the air was along the lines advocated by our European advisers who did not, at times, hesitate to suggest policies as well as technical details. Hasty improvisation in organization and for a quantity production along any line is always costly, and particularly is this true during war. America considered that, when the call came, cost was to be the detail of least importance. Fortunately for the United States, the necessary funds were available. We knew that we had plenty of determined men and hoped that our allies would be able to hold the enemy until we could take up our position in their ranks.

Mr. Spaight believes that, "It was a tragedy that the task of the British and French pilots in the spring and summer of 1918 should have been made infinitely harder than it otherwise would have been because they had to meet a German air force strongly reënforced as the result of a menace which never materialized."

Americans will prefer to think that the suddenly-conceived and smartly-executed plans of the United States resulted differently, and that the moral and physical effect of America's aëronautical effort found a place in the scale when the balance swung in favor of the allies. They believe that the sudden collapse of the German machine resulted primarily from America's wholehearted and strong influence, and the unbelieveable feat of, in nineteen months, creating and throwing an army of two million men across the Atlantic. Economy was entirely, and possibly wisely, ignored in order to force a quick decision, and the cessation of hostilities in November, months sooner than was expected by the most extreme optimist, certainly must have avoided much bloodshed and material wastage.

Mr. Spaight has not given to the development of civil aviation the importance which it would seem to deserve, but his volume will be of particular interest to the British public, for whom it manifestly was written. An ulterior purpose of this most unusual treatise may appear to be to instruct other nations, in a friendly kind of way, just how to improve and to perfect their systems of air administration. This is unique, as in the past a great power generally has taken all possible precautions to prevent other states from discovering the best and proved methods for military efficiency.

Time alone will show the wisdom of retaining, in peace and for the future, the plan for the administration of the air arm adopted by Great Britain. Every state will wish to decide for itself the organization best suited for its own needs, and books such as *The Beginnings of Air Power* will assist study to this end.

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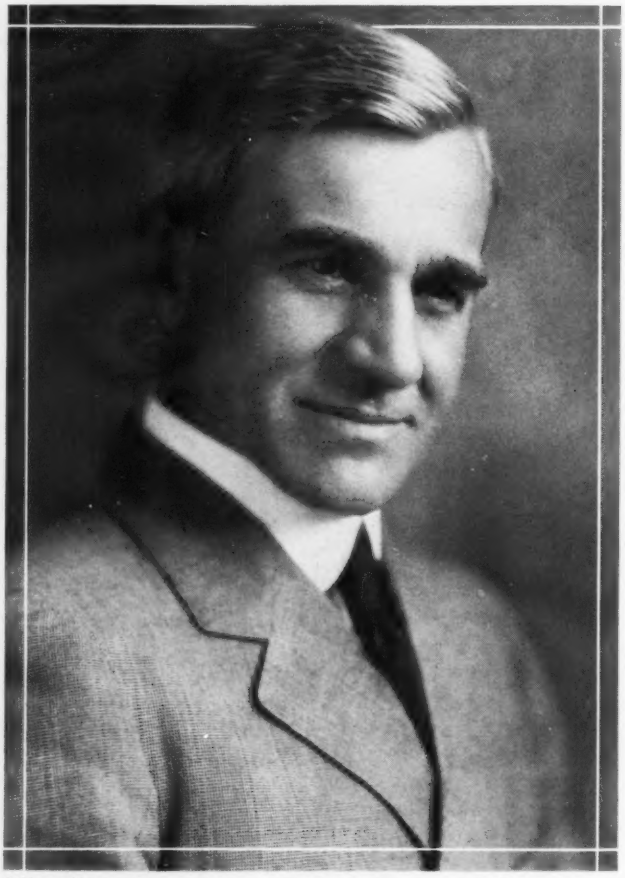
Photo by Edwin Levick, New York. © Newport News Shipbuilding and Dry Dock Co.

S. S. "CALIFORNIA"

Latest product of the Newport News Shipbuilding and Dry Dock Company for service between the East and West Coasts of the United States by way of the Panama Canal.



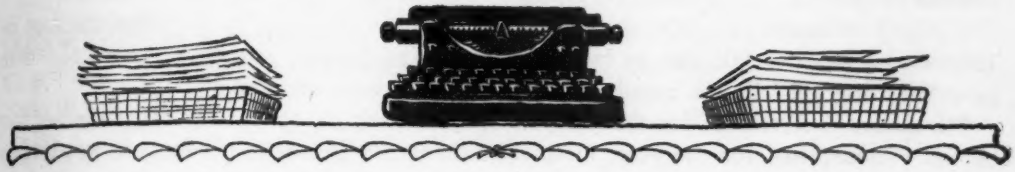
© *Harris & Ewing*

Distinguished Graduates in Civil Life

Homer Lenoir Ferguson

SHIPBUILDER; b. Waynesville, Haywood Co., N.C., March 6, 1873; s. William Burder and Laura Adelaide (Reeves) F.; grad. U. S. Naval Acad. 1892; studied Glasgow U. 1892–5; m. Eliza Anderson Skinner of Ky. Sept. 23, 1896. Asst. Naval Constr. Columbian Iron Works, Baltimore, Md. 1895–6; Superintending Constructor with Wolff & Zwicker, Portland, Ore. 1896–9; Navy Yard, Bremerton, Wash. 1899–1900; Supt. Constructor Bath (Me.) Iron Works 1900–2; Asst. Supt. Constr. Newport News (Va.) Shipbuilding and Dry Dock Co. 1902–4; with Bu. Constrn. and Repair, Washington, D.C. 1904–5; Res. Feb. 1, 1905; with Newport News Shipbuilding and Dry Dock Co. in various capacities since 1905, Pres. and Gen. Mgr. since 1915; Pres. First National Bank, Newport News; Pres. Chamber of Commerce of United States 1919–20; member National Foreign Trade Council; Trustee Hampton Normal and Agril. Institute; member Advisory Comm. Mass. Inst. Tech.; member Acad. Political Science; Society Naval Engrs.; Society Naval Architects and Marine Engrs.; Episcopalian, Mason, Elk. *Clubs:* Engineers (New York), Army and Navy, City (Washington, D.C.), Westmoreland (Richmond, Va.) Director Engineers' Public Service Company (New York). *Home:* 5700 Huntington Avenue, Newport News, Virginia. "Chevalier de la Legion d'Honneur," "Knight Commander of the Order of Leopold II."

SECRETARY'S NOTES



The Fleet Twenty Years Ago

On March 12, 1908, the fleet arrived at Magdalena Bay. This bay is in Mexican territory, on the west coast of Lower California, and for years with the permission of the Mexican government, was used as a base for training. For nearly a month the fleet was engaged in the various forms of target practices. Mixed in with the work was a reasonable amount of play.

Target practices began almost immediately after the fleet's arrival, which was on a Saturday. Some ships fired on the next Monday. Scores were higher than had ever been made before and demonstrated that fleets could train at sea.

Recreation on shore was limited on account of the dearth of fresh water. However, baseball games were carried on and hikes were popular. Water sports there were in plenty. The finest fishing in the world was to be had; pulling and sailing races were numerous.

The fleet left Magdalena Bay on April 10, "fit for a fight or a frolic," as Admiral Evans stated, and which remark was the occasion for the following jingle:

We're off in foam and laughter,
And we don't know what we're after,
But the Admiral, he sez, sez 'e,
"Be it fight or be it frolic,
We won't be solemncholic,
And we ain't a caring which,"
Sez 'e.

Then on to San Diego and the U.S.A.! The fleet arrived in San Diego on April 14. Does anyone else remember the little yacht that met the fleet in the vicinity of the Coronados and began a twenty-one gun salute with her one little cannon? The salute began with the passing of the fleet flagship and wound up way down the line of battleships.

Four days of wonderful entertainment at San Diego; many wives who had journeyed across the continent to meet the fleet; dances at the Coronado Hotel, barbecues, etc., etc. It was a fitting welcome to the Coast.

Then on to other Southern California ports, San Pedro, Santa Monica, Santa Barbara and the Hotel Potter, now burned down but then most beautiful; Redondo, Los Angeles and its beautiful mountains. (And, of course, the first rain in April for twenty years!) The West Coast wanted to make the fleet feel at home and it did.

All told, it was a "gorgeous" time and we hated to leave. Admiral Evans, in the meantime, was in ill health and had to be absent from the most of the official entertaining; it was only his determination that kept him "carrying on."

Next month we will have the fleet arriving at San Francisco.

The Annual Meeting and the Secretary's Report

At the annual meeting of the Naval Institute, held in Annapolis on February 16, 1928, Rear Admiral Edward W. Eberle was elected President of the Naval Institute. The Vice-President, Secretary-Treasurer and the Directors were all re-elected.

The changes in the Constitution, namely, to reduce the cost of Life Membership to $60 and to increase the foreign postage rate to $1, were found to have been approved by the members when the votes were counted.

The financial statement for the year ended December 31, 1927, shows that the net loss on the PROCEEDINGS for the year, in spite of the increased cost of production, was largely taken care of by the increased returns from advertising which, for this year, netted the Naval Institute $12,594.95 as compared to last year's returns of $10,314.50.

The net increase in members for the year just ended was 874 as compared to 599 last year. It is believed that as soon as the new and improved PROCEEDINGS becomes better known the increase in membership will be even greater than last year.

The accounts of the Institute were examined by certified public accountants and the Balance Sheet and the Profit and Loss Statement will be found at the end of these notes.

Past Presidents of the Institute

Rear Admiral Hilary P. Jones, in retiring from the Presidency of the Naval Institute, joins the distinguished list of past presidents. The members of the Institute have appreciated the help and advice of Admiral Jones during the time he was President. Although he is retired, after a most distinguished career, it is believed that Admiral Jones will still have a great influence in the problems of the nation, as his ability is well known to Congress. As officers of the Navy we can do no better than to aspire to the standard set by Admiral Jones.

The Trophies

In this number we have reproduced pictures of some of the more important trophies. We are unable to picture all the athletic trophies of which there are legion. Not all of us have been fortunate enough to be on trophy ships, so this may be a means of letting us know for what we are striving. The trophies visualize the results of our efforts during the hustle and bustle of a competitive year.

The Prize Essay Contest, 1928

In the Prize Essay Contest for 1928 the Board of Control felt that no essay submitted merited the Naval Institute's prize, consisting of a gold medal, a cash award and Life Membership. The Board, however, felt that the essay, "On the Prevention of War," by Lieutenant Commander A. H. Rooks, U. S. Navy, was worthy of honorable mention and an honorarium of $150.

This essay is published as the leading article in this issue.

Burial Place of Major L'Enfant

Mrs. Richard S. Hill, of Washington, D.C., informs us that our February issue, Plate XIII (4) was in error, as the French Army Engineer, Major L'Enfant, designer of the City of Washington, died and was buried at the home of her grandfather, William Dudley Digges, Chilham Castle Manor, Green Hill, near the town of Bladensburgh. The body was moved from there, by the government, to Arlington National Cemetery.

Change of Secretary At the annual meeting of the Naval Institute, it was announced by the Committee of Tellers that Captain H. A. Baldridge, U. S. Navy, had been re-elected Secretary-Treasurer of the Naval Institute. Upon conclusion of the annual meeting the Board of Control met and a letter of resignation from Captain Baldridge was tendered. The Board of Control accepted Captain Baldridge's resignation with regret, and appointed Captain R. C. MacFall, U. S. Navy, Secretary-Treasurer to fill the vacancy.

The Board passed the following resolution:

WHEREAS

CAPTAIN HARRY ALEXANDER BALDRIDGE

UNITED STATES NAVY

after three years' service to the

UNITED STATES NAVAL INSTITUTE

is about to relinquish his duties as Secretary and Treasurer, and,

WHEREAS, *the Board of Control,*

UNITED STATES NAVAL INSTITUTE

has been pleased to note the comments and tributes from members and others indicating a general approval of the recent progress of the Institute in the advancement of professional, literary, and scientific knowledge in the Navy; therefore,

BE IT RESOLVED *By the Board of Control, on behalf of the membership of the United States Naval Institute, that there be now recorded this expression of appreciation of the loyal, zealous, and efficient services of Captain Harry Alexander Baldridge, United States Navy, in furthering the objects for which the Institute was founded.*

A copy of this resolution, embossed in colors, is being forwarded to Captain Baldridge, now in command of the U.S.S. *Rochester.*

What is the Use? Colonel Lindbergh is beginning to pay the price of greatness. His every act is scrutinized to such a point that he has just cause to be exasperated. But we imagine his greatest disappointment came when he stepped from his plane in St. Louis, after his epic flight to Central America and the West Indies, tired and, as he thought, successful. Having made a flight of 20,000 miles, which took in every state in the Union and then another taking in some seventeen foreign countries, to demonstrate that commercial flying is safe and dependable, he stepped from his plane to be greeted with the news that steps are being taken to control his flying activities in order that he may not lose his life by an airplane accident! The Colonel must be able to control his temper as well as he controls his plane.

The Navy in China Although our article "Nanking, March, 1927," published in the January issue of the PROCEEDINGS, covered the Nanking part of the Navy's operations in China, it was felt that the article published in this issue under the title, "Operations of the U. S. Navy on the Yangtze River, September, 1926, to June, 1927," gave additional information on the Chinese situation and should be published, even if there was some duplication. In the "episode of the lost machine gun," readers will see the results of disarmament as practiced by the exponents of disarmament.

The "Detroit Plan" The Navy will follow with interest the progress of the so-called "Detroit Plan" of the "Chambers of Commerce."

The Detroit "Chamber of Commerce" in 1926 organized a committee of National Defense, the duties of which are to consider "all national defense and patriotic matters." Upon the recommendation of the committee, the Board of Directors of the Detroit Board of Commerce, on December 2, 1926, unanimously adopted a resolution in support of an adequate system of national defense as provided in the National Defense Act.

Due to the wide publicity given this resolution through the public press, it was subsequently adopted by nearly 300 civic, commercial patriotic and veteran organizations throughout the country. It was also adopted by both houses of the Legislature of the State of Michigan.

The Board of Directors of the National Chamber of Commerce adopted the Detroit Board's resolutions in principle and distributed the "Detroit Plan" throughout its organization.

The time has come when the people of the country must declare themselves on the subject of National Defense. National Defense will be just what the people demand and no more. And when we say people, we mean the responsible people of the country.

When "soviets" can be organized in our schools, when pacifists fill the air with their propaganda, when theorists harangue Congress, it is time for the doers of the country to bestir themselves.

We know of no better bodies than the "Chambers of Commerce" which can properly represent the responsible citizens of the country.

This country right now is in more danger from within than from without. The problem of national defense should be in the hands of those accustomed to accept responsibility rather than in the hands of those who, in times of peace, preach pacifism and, in times of national emergency, "roll bandages and sell Liberty Bonds."

The time has passed when "parlor Bolsheviks" can be ignored, as the microphone permits them to pollute the air. Real Americans had better take control of American policies and the "Detroit Plan" offers a solution of the problem.

Who's Who in America ***Coolidge, Calvin,*** President of the United States of America. Elected to this office by the people of the United States. Charged, under the Constitution, with defending the Constitution. Has a Cabinet to advise him. Has a trained diplomatic and consular service to keep him informed as to the situation abroad. As Commander-in-Chief of the Army and Navy, is responsible to the people of the United States for their readiness and fitness. Has had experience with disarmament while Governor of Massachusetts.

Libby, Frederick J., loud speaker for an organization which calls itself the "National Council for the Prevention of War." Not known where this organization got its national qualifications. It is responsible to no one for anything. Has dispensed $100,000 this

year and hopes to dispense $120,000 next year, which should provide a comfortable salary for some of its officers, with reasonable hopes for an annual increase. Although Mr. Libby has no record of having done anything to "Win the War" in 1917-18, he professes to be an authority on problems of national defense.

> "And the sun stood still, and the moon stayed,
> Until the nation had avenged themselves of their enemies."
>
> Joshua, 10.13

If the Lord was willing to upset the laws of the universe in the interest of a war of vengeance certainly our fundamentalists should not be adverse to the nation providing itself with a means for National Defense.

Our Distinguished Graduate in Civil Life

Although Mr. Homer L. Ferguson's record in civil life is generally known to the men of big affairs, probably his greatest achievement is unnoted, namely his keeping in operation the great plant under his control during the terribly lean years immediately following the World War. Mr. Ferguson performed a public service in keeping this national asset intact.

The Naval Institute Regrets

Recently two of the older members of the Naval Institute passed to the great beyond. Rear Admiral G. C. Remey, oldest living graduate of the Naval Academy at the time of his death, graduated in the Class of '59 and joined the Institute in '81, while a commander. Rear Admiral Franklin Hanford graduated in the Class of '66 and joined the Institute in '79, while a lieutenant. For nearly fifty years they supported the aims and ideals of the Naval Institute, whose members regret their passing.

What is a Premise?

Radio offers a wonderful outlet for those speakers who make a statement, use it as a premise regardless of its truth and then reach entirely erroneous conclusions. For instance, recently a speaker stated that the armed forces of a country brought on war and that if the great nations would agree to disarm, there would be no more wars. One might just as well say that our courts and legal machinery discover criminals, eliminate the judges and there would be no more crime. Or, our educators produce literates, do away with them and there would be no illiterates.

The speaker, in naming the *great nations,* mentioned only those that were well equipped in armed forces. Might there not be some connection between their greatness and their armed forces? And has there ever been a great nation that has not been well armed?

We have not mentioned the sex of the speaker, but it is well to remember that it was Delilah who inveigled Samson into getting a hair-cut!

Colored Frontispieces

The Naval Institute is now prepared to furnish reproductions of our colored frontispieces, framed or unframed. Prices are as follows:

Unframed, $1.00 each, postage prepaid.
Framed, with mat, $3.50 each, postage prepaid.
Framed, with mat, set of five, $15.00, postage prepaid.

The outside dimensions of the framed pictures are 9½ by 13½ inches. The frames do justice to the pictures.

Digest of Naval Communications

The Naval Institute has just brought out another book, *A Digest of Naval Communications*. This book supersedes *Naval Communications* and can be had for $1.25 the copy.

The Days of Sail

The Editor received a letter from Rear Admiral Elliot Snow on the subject of "Kedging" as applied in 1813. It is felt that the service would appreciate the letter, so it is quoted below:

"The following extract from Porter's *Journal*[1] of the cruise made by him in the Pacific Ocean in the United States frigate *Essex*, while it has no connection with 'How the *Constitution* Escaped'[2] from the British squadron in July, 1812, does throw a possible sidelight on that great feat of seamanship of Hull and Morris. Apart from this, even the knowledge of the use of an umbrella-shaped floating 'sea anchor' by Porter in the winter of 1813 may have interest for the readers of the PROCEEDINGS and even be of future value should any of our destroyers, submarines, or other smaller craft completely break down at sea. To be able to make fifty miles a day is a whole lot better than wallowing around helpless for months as did recently an unfortunate Japanese steamer.

"The *Essex* in attempting to reach an anchorage at the Island of Alvarade, after being anchored overnight, got under way at 9:00 A.M., January 20, 1813, 'in the light and baffling winds from the southward and the tide in her favor which generally ran about one and one-half knots. After making two tacks *both wind and tide failed.*' The *Journal* thus records":

> We were then about two miles from the place I wished to anchor in; and being anxious to get the vessel secured as soon as possible, and finding that our boats could be of very little assistance in towing I put in operation *an invention of mine,* for propelling a ship in a calm; and in three-quarters of an hour brought her to anchor, at the back of the fort, and opposite the most convenient watering place, in six fathoms of water.
>
> This contrivance consists of two *floating* anchors, six feet square, which are worked on both sides of the ship, by hauling lines from the spritsail yard and a spar rigged across the stern. The line from the spritsail yard is made fast to the upper corner of the anchor; and when hauled on, it brings the anchor forward skimming along the surface of the water. When it is let go, the anchor falls by means of the weight attached to it, in a vertical position; and *as it is slung* something in the manner of a log-chip; and the rope to the stern made fast to the spar it is dragged aft, propelling the ship (forward) in proportion to the force applied to the drag rope. A ship's crew, consisting of 300 men, will drag her forward in a calm, with this contrivance, *at the rate of two miles an hour.*[3]

"I hope that ere long some enterprising commander of one of our destroyers will perform a maneuver of this kind (as a pastime, not because of necessity, or as a bit of exercise). I have a notion that the long, lean underwater body of a destroyer will lend itself to a speed considerably greater than two miles an hour. And, too, when *Old Ironsides* does float proudly once more, for her triumphal tour of our littoral, that the Kedging Maneuver will be tried and the action photographed."

[1] *Journal of a Cruise Made in the Pacific Ocean,* by Captain David Porter, published by Bradford and Inskeep. Philadelphia, 1815.

[2] U. S. NAVAL INSTITUTE PROCEEDINGS, Volume 53, No. 291, May, 1927, p. 623.

[3] The italics are not in the original.

Annual Financial Statement

UNITED STATES NAVAL INSTITUTE
ANNAPOLIS, MARYLAND

Balance Sheet, December 31, 1927

ASSETS			
CASH in Banks		$ 30,944.39	
ACCOUNTS RECEIVABLE			
Dues in Arrears	$ 889.54		
From Advertisers	1,304.25		
From Book Sales	4,390.63		
Interest Accrued	2,680.97		
TOTAL RECEIVABLES		9,265.39	
OTHER ASSETS			
Bonds at Cost		157,395.09	
Inventories			
Institute Publications	$ 29,723.66		
Purchased Books	2,474.99	32,198.65	
Furniture and Fixtures		2,082.31	
Miscellaneous			
Donations—Naval Historical Foundation	1.00		
Envelopes	1.00		
Books written off	1.00		
Certified Check Outstanding as Bond	175.00	178.00	
Prepayments			
Royalties	$ 249.81		
Expense	368.43		
Manuscript of Articles awaiting Publication	981.63		
Photographs and Engravings awaiting Publication	3,650.70	5,250.57	
LIABILITIES			
ACCOUNTS PAYABLE			
Various Dealers	$ 5,902.06		
Accrued Royalties	763.08		
Naval Historical Foundation	125.00		$ 6,790.14
PREPAYMENTS			
Dues	$ 10,965.49		
Subscriptions	1,581.39		
Sundries	391.69		12,938.57
RESERVE for UNCOLLECTABLE DUES			1,500.00
DEFERRED CREDITS			
Contingent Profits			14,041.10
SURPLUS			202,044.59
		$237,314.40	$237,314.40

UNITED STATES NAVAL INSTITUTE
ANNAPOLIS, MARYLAND

Statement of Profit and Loss for the Year Ended December 31, 1927

"PROCEEDINGS"			
Sales	$ 1,509.67		
Income from dues and subscriptions	17,465.01		
Income from advertisements	12,594.95		
TOTAL INCOME FROM "PROCEEDINGS"		$ 31,569.63	
Publishing cost	$ 28,487.89		
Payments to Authors of Articles	4,465.75		
Prize Essay Awards	169.60		
TOTAL COST OF "PROCEEDINGS"		33,123.24	
LOSS ON "PROCEEDINGS" (excludes overhead)			$ 1,553.61
INSTITUTE PUBLICATIONS			
Sales		$ 58,420.76	
Inventory January 1, 1927	$ 24,492.61		
Purchases	33,848.54		
	$ 58,341.15		
LESS: Inventory December 31, 1927	29,723.66		
	$ 28,617.49		
Payments to Authors	3,170.29		
TOTAL COST OF BOOKS SOLD		31,787.78	
		$ 26,632.98	
LESS: Contingent Profits		4,077.72	
GROSS PROFITS (excludes overhead)			22,555.26
PURCHASED BOOKS			
Sales		$ 4,684.40	
Inventory January 1, 1927	$ 437.31		
Purchases	5,963.45		
	$ 6,400.76		
LESS: Inventory December 31, 1927	2,474.99		
TOTAL COST OF BOOKS SOLD		3,925.77	
GROSS PROFIT (excludes overhead)			758.63
GROSS PROFIT FROM OPERATIONS			$ 21,760.28
OVERHEAD OPERATING EXPENSE			
Postage, Express and Hauling	$ 2,331.55		
Office Expense	4,292.01		
Moody's Service	120.00		
Salaries	13,603.87		
Board Meeting	1,495.68		
Advertising	1,004.87		
Cost of Collections	10.95		
Insurance	42.03		
Depreciation (Furniture and Fixtures)	235.93		
Telegraph and Telephone	449.71		
Auditing	200.00		23,786.60
OTHER INCOME			$ 2,026.32
Income from Interest			9,199.94
NET PROFIT for year 1927			$ 7,173.62